

Participation and Expenditure Patterns of African-American, Hispanic, and Female Hunters and Anglers

*Addendum to the 2011 National
Survey of Fishing, Hunting, and
Wildlife-Associated Recreation*

Report 2011-9



Participation and Expenditure Patterns of African-American, Hispanic, and Female Hunters and Anglers

*Addendum to the 2011 National
Survey of Fishing, Hunting, and
Wildlife-Associated Recreation*

Report 2011-9



May 2016

Erin Carver
U.S. Fish and Wildlife Service
Division of Economics
Portland, OR

This report is intended to complement the National and State reports from the 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. The conclusions are the author's and do not represent official positions of the U.S. Fish and Wildlife Service.

The author thanks Sylvia Cabrera, Richard Aiken, and Matthew Fuller for their input into this report.

Contents

Introduction	3
Hunting	4
Fishing.....	25
Summary.....	42
Appendix A: Sample Sizes.....	43

Introduction

Since the U.S. Fish and Wildlife Service began tracking the demographics of hunters and anglers in 1955, participation rates of females and minorities have consistently been below the national averages for hunting and fishing activities. This trend is becoming more significant to the future of hunting and fishing due to the changing demographics of the United States. According to U.S. Census projections, Hispanic and African-American populations are growing at a faster rate than the rest of the American population. In 2011, the Nation's Hispanic population totaled 52.0 million, a 34 percent increase since 2001. Furthermore, 1 in 6 Americans were Hispanic in 2001. In 2030, almost 1 in 5 Americans will be Hispanic. In 2011, the Nation's African-American population totaled 43.9 million, a 15 percent increase since 2001. Today 1 in 8 Americans are of African-American descent, a ratio that will continue to be represented in 2030. Females are also under-represented in hunting and fishing. Although females comprise 51 percent of the population (this is expected to remain constant through 2030) their participation in hunting and fishing is far below that of the national average.

This report highlights differences among select low participation groups in terms of participation rates, geographical distribution, participation levels (days and trips per year), and associated expenditures. It also reports the relative usage of private or public land hunting, types of hunting and fishing, and species sought.

The descriptive statistics of this report are divided into a fishing section and a hunting section. The fishing section compares all anglers to the participation rates, participation levels, expenditures, and fishing preferences for African-Americans, Hispanics, and females. The hunting section compares all hunters to the participation rates, participation levels, and expenditures for African-Americans, Hispanics, and females. At the end of the hunting section, females' participation and expenditures for



USFWS

hunting activities are further analyzed by selected demographic characteristics. Due to small sample sizes, this further analysis is not provided for African-American or Hispanic hunters. However, the larger sample sizes for fishing activities provides adequate data to analyze each subpopulation in this demographic detail in the fishing section. Sample sizes are shown in Appendix A.

All data presented here are from the 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR). It is the most comprehensive survey of wildlife recreation in the United States. Overall, about 11,300 detailed wildlife-watching interviews were completed with a response rate of 69 percent. The Survey focused on 2011 participation and expenditures by U.S.

residents 16 years of age and older. The data for the total population of hunters and anglers include all subpopulations (henceforth referred to as 'all hunters' or 'all anglers', respectively). Data for African-Americans include all persons who identified themselves as Black or African-American in the Survey. This includes all African-American participants who are male or female and those who identified themselves also as Hispanic. Likewise, the Hispanic category includes persons of both sexes and of any race. The female category includes all races and ethnicities.

Hunting

Overview

Table 1 highlights the total number of hunting participants, days and trips, and trip-related and equipment expenditures for African-American hunters, Hispanic hunters, female hunters, and the total population of hunters. Females were the largest subpopulation, and spent the most money, a combined total of about \$1.2 billion on hunting equipment and trip-related expenditures. African-American hunters spent more on average for hunting than the other subpopulations. African-American hunters spent more days hunting on average than the other subpopulations while Hispanic hunters took more hunting trips per hunter per year.

Table 1. Hunters, Days, Trips and Expenditures: 2011				
(Includes hunters 16 years of age and older. Numbers in thousands, except averages.)				
	All Hunters	African-American Hunters	Hispanic Hunters	Female Hunters
Hunters	13,674	413	271	1,457
Days of Hunting	281,884	6,368	3,846	18,826
Mean Days of Hunting	21	15	14	13
Trips	256,640	5,341	4,989	16,810
Mean Hunting Trips	19	13	18	12
Total Hunting Expenditures	\$20,004,393	\$515,792	\$293,074	\$1,174,192
Trip Expenditures	\$10,421,189	\$282,555	\$142,473	\$617,295
Mean Trip Expenditures	\$762	\$685	\$526	\$424
Equipment Expenditures	\$9,583,204	\$233,238	\$150,601	\$556,896
Mean Equipment Expenditures	\$701	\$565	\$556	\$382



USFWS

Hunting Participation

Hunting participation rates are calculated by dividing the number of hunters in a particular subgroup by the total population in that subgroup. The subgroup population in the U.S. is determined by using the data from the screening sample.

Figure 1 reveals the U.S. hunting participation rates for persons age 16 and over for the total population, African-Americans, Hispanics, and females. Hunting participation is not consistent across subgroups. The participation rates of the African-Americans, Hispanics, and females were much lower than the total population. While about 6 percent of the total population hunt, only 2 percent of African-Americans hunt, 1 percent of Hispanics hunt, and 1 percent of females hunt.

Regional Distribution of Hunters

The regional distribution of hunters illustrates where hunting generally occurs in the U.S. With this information, we are better equipped to understand where pressure on game and hunting resources may occur.

Figure 2 shows the distribution of hunter subpopulations throughout the country. The majority of African-American hunters and female hunters live in the South (95 percent and 46 percent, respectively). The largest regional population of Hispanic hunters live in the West (43 percent). Sample sizes for African-American hunters were too small to report data reliably for the Northeast, Midwest, and West regions. Samples sizes were also too small for Hispanic hunters in the Northeast, Midwest, and South regions.

Figure 1. Participation Rates for Hunting

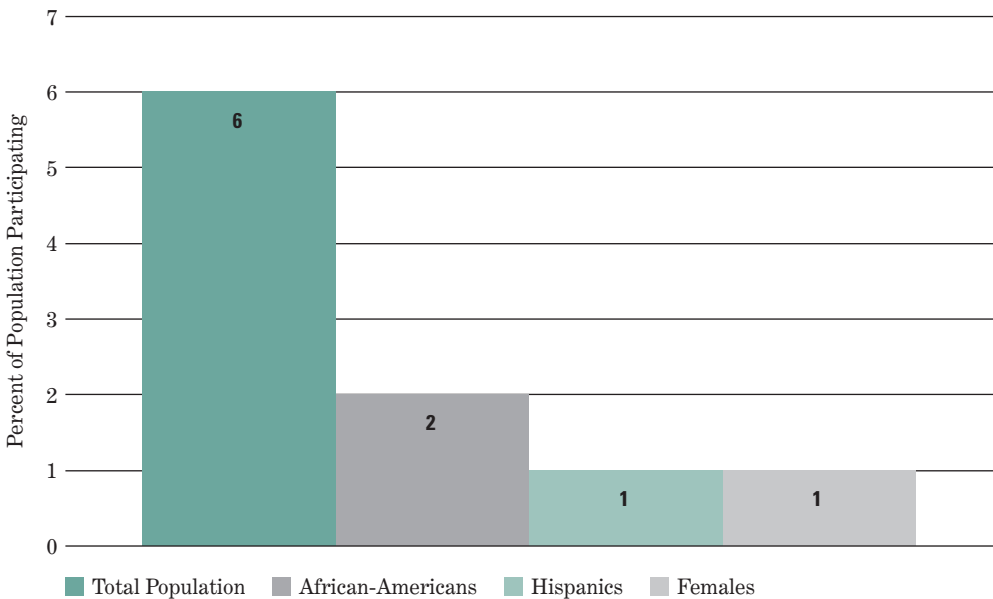
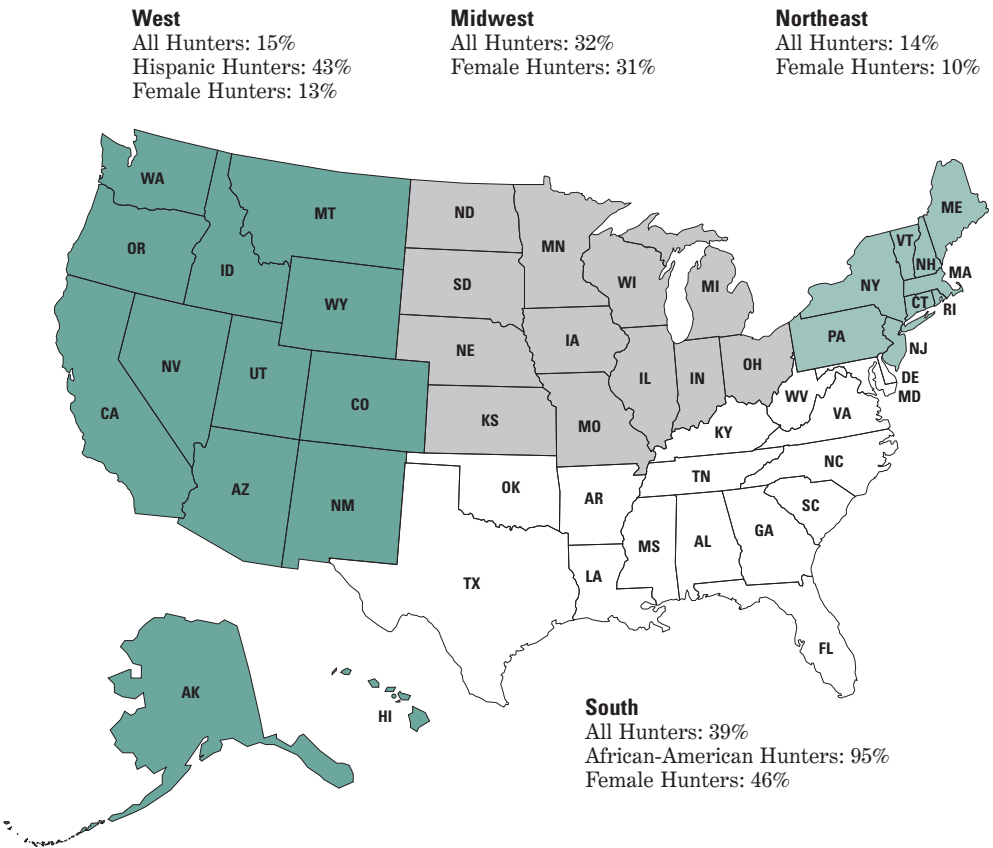


Figure 2. Where do they live? Regional Distribution of Hunters.



Note: Estimate based on a small sample size. African-American and Hispanic hunters do not sum to 100 because some samples were too small to report.

Hunting Participation Levels

In addition to data regarding the number of people hunting, data about the frequency of hunting also presents valuable information for resource management.

The national participation average for all hunters is 21 days and 18 trips (Figures 3 and 4). Of the subpopulations, African-Americans hunted slightly more (15 days) than did Hispanics (14 days) and females (13 days). When comparing the average number of hunting trips, Hispanic hunters took the most hunting trips (18 trips), followed by African-Americans (13 trips) and females (12 trips). Figures 3 and 4 show the mean annual hunting days and mean annual hunting trips for each population group.

Figure 3. Mean Days of Hunting

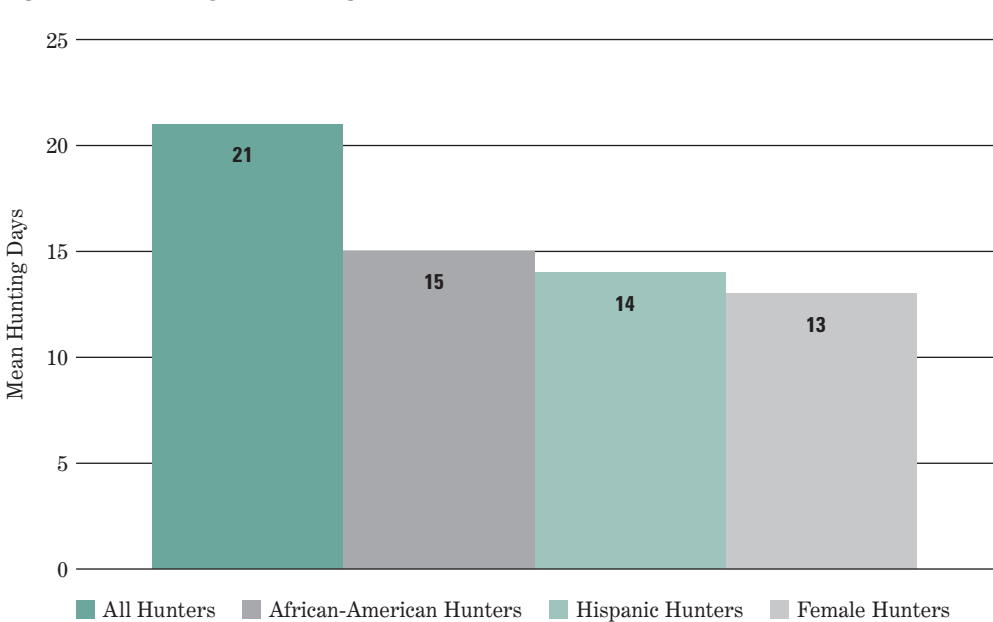
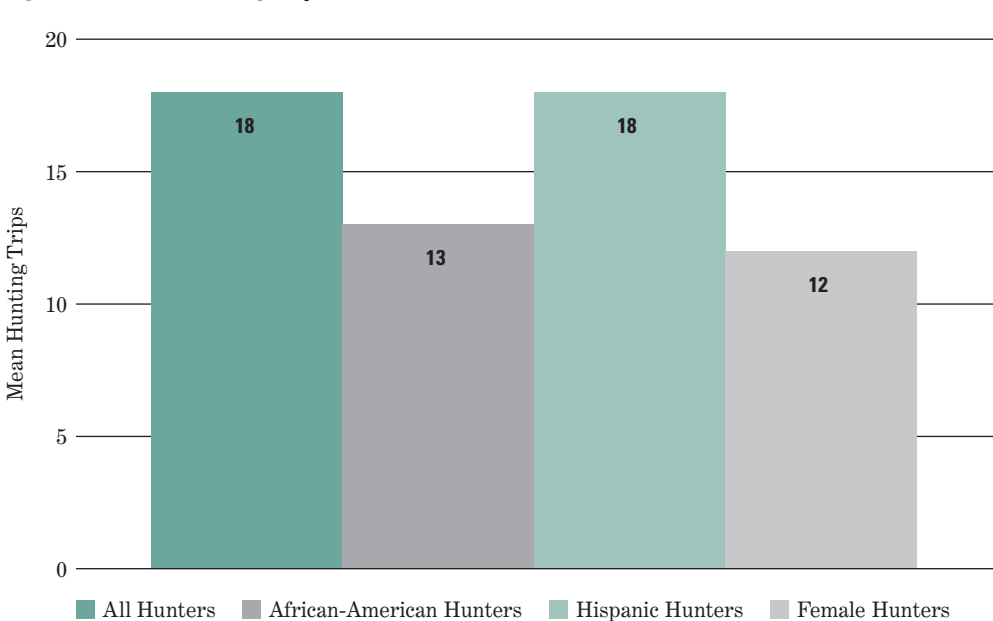


Figure 4. Mean Hunting Trips



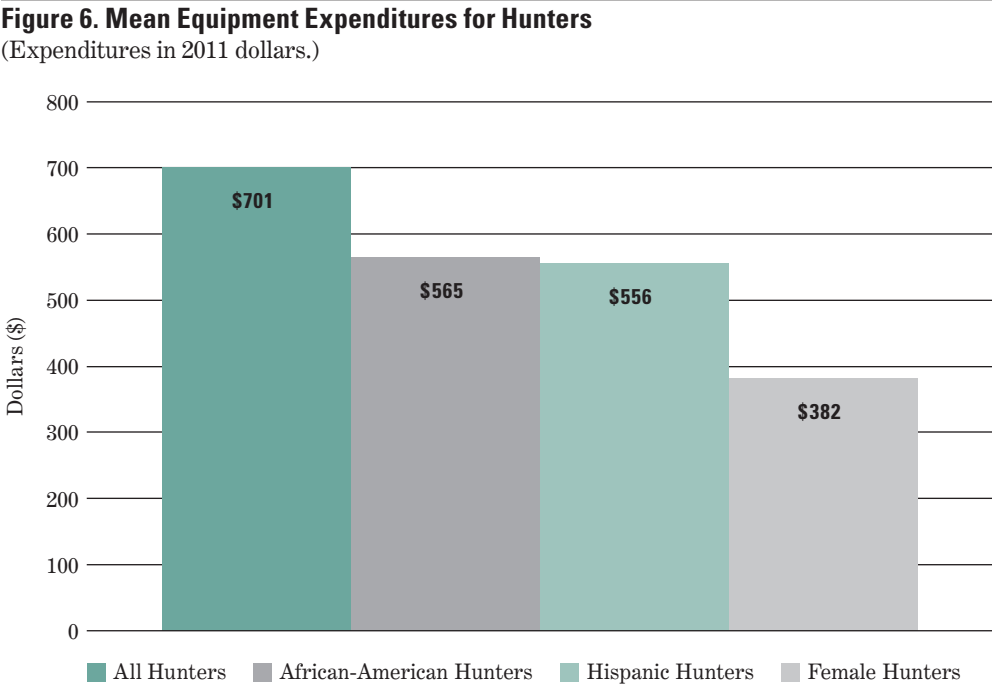
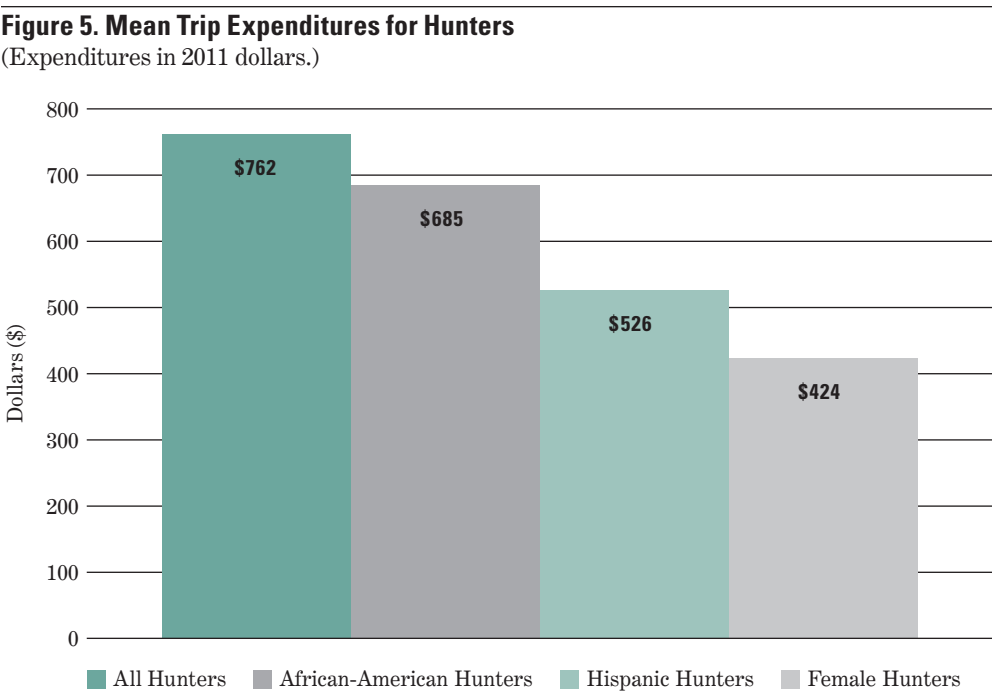
Hunting Expenditures

Hunting expenditures are divided into two categories: trip-related expenditures¹ and equipment expenditures². Figure 5 illustrates a comparison of mean trip expenditures for hunters. All subpopulations spent less on average than all hunters (\$762): African-Americans spent \$685 per year; Hispanics spent \$526, and females spent the least, \$424.

Average spending for hunting equipment is shown in Figure 6. In this case, each of the subpopulations average less than the national average for all hunters (\$701). Of the subpopulations, African-Americans again spent the most (\$565), while Hispanics spent \$556 and females spent \$382.

¹ Trip-related expenditures include food, drink, lodging, public and private transportation, guide fees, pack trip or package fees, public and private land use access fees, equipment rental, boating costs, and heating and cooking fuel.

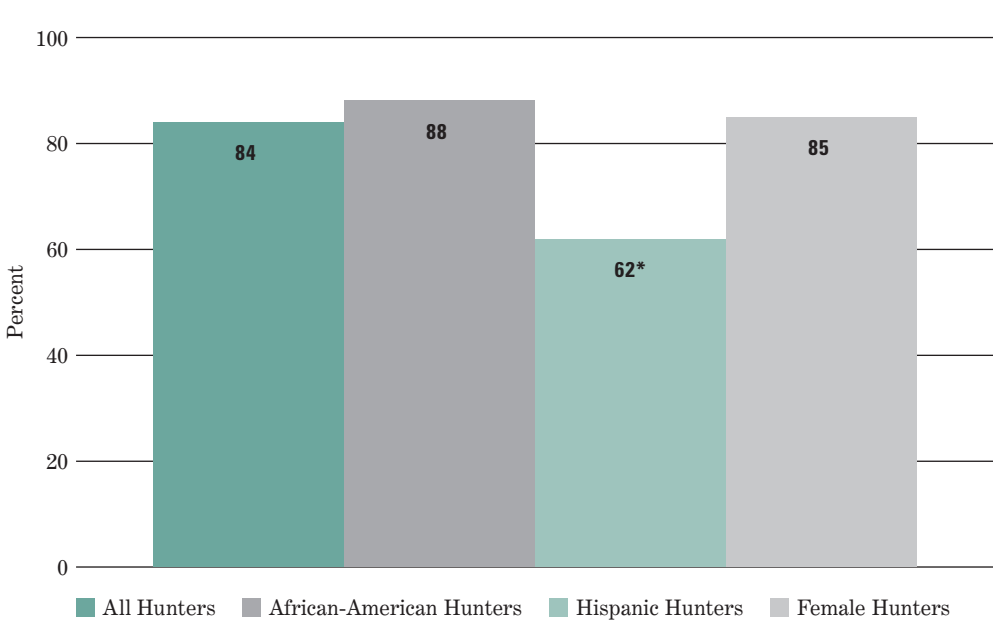
² Equipment expenditures consist of rifles, shotguns, other firearms, ammunition, bows and arrows, telescopic sights, decoys, hunting dogs and associated costs. Also included are auxiliary equipment such as camping equipment, binoculars, special hunting clothing, processing and taxidermy costs. Excluded from equipment expenditures are special equipment purchases such as boats, campers, trucks, and cabins.



Hunting on Private and Public Land

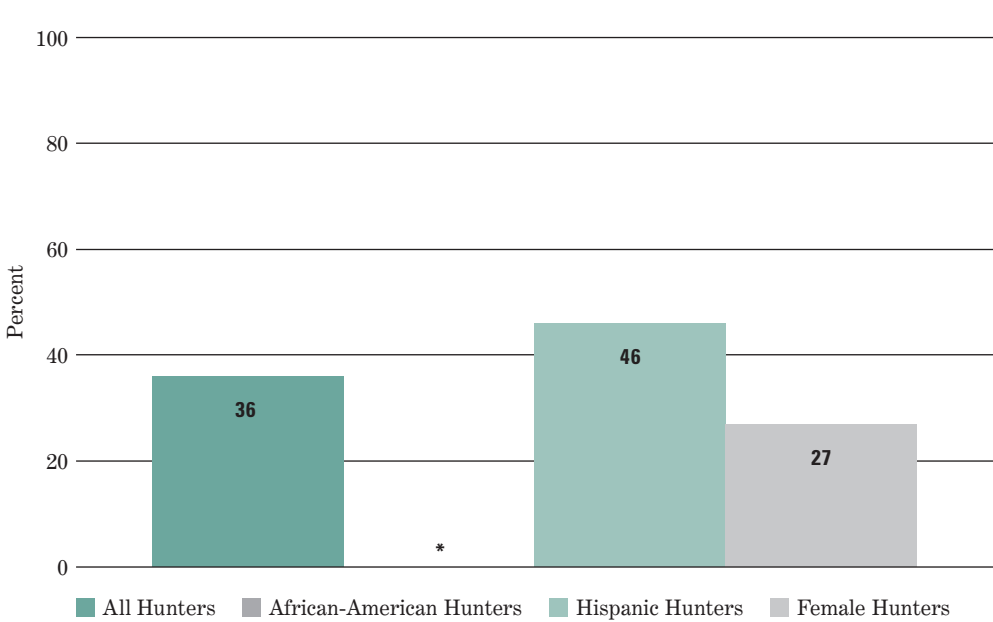
As with participation levels, the number of hunters hunting on private and public land reveals hunting choices and levels of resource use. Figures 7 and 8 show, respectively, the percentage of each group that hunt on private land and the percentage of each group that hunt on public land. Typically, more hunters hunt on private land than on public land although many hunt on both. At least 62 percent of each subpopulation hunt on private land. A far greater percentage of female hunters hunt on private land (85 percent) than on public land (27 percent). African-American hunters also favor hunting on private land (88 percent). In contrast, the margin between private land (62 percent) and public land (46 percent) for Hispanic hunters is much smaller.

Figure 7. Hunters Hunting on Private Land



**Estimate based on a sample size of 10–29.*

Figure 8. Hunters Hunting on Public Land



**Sample size for African-American hunters is too small (less than 10) to report data reliably.*

Types of Hunting and Selected Game

In order to better understand the needs of African-American, Hispanic, and female hunters, it is helpful to know what kind of hunting they participate and which type of game they hunt. Figure 9 shows the percentage of hunters that participate in big game hunting, small game hunting, migratory bird hunting, and hunting other animals³. Figure 10 depicts the percentage of hunters that hunt selected game. These game were selected because they were the most sought after species in 2011.

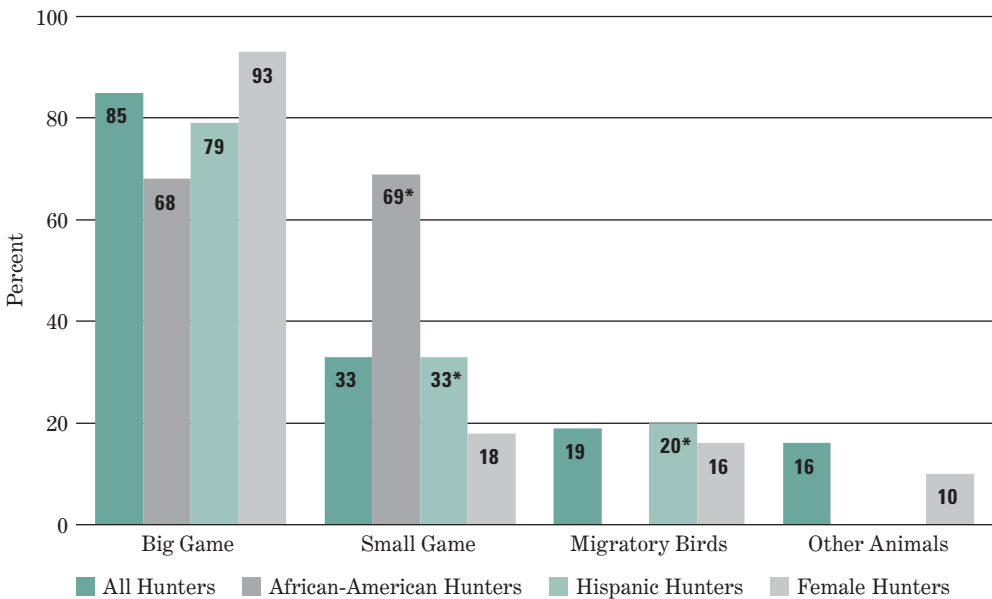
In general, female hunters follow the national trend for all hunters with 93 percent participating in big game hunting, fewer in small game hunting (18 percent) and fewer still pursuing migratory birds (16 percent) and other animals (10 percent). Similar to all hunters, deer is the most popular type of game for females (89 percent).

For Hispanic hunters, big game hunting is far more popular than other types of hunting. Seventy-nine percent of Hispanic hunters hunt big game in comparison to 33 percent hunting small game, and 20 percent hunting migratory birds. Consistent with these findings, 61 percent of Hispanic hunters hunt deer and only 28 percent hunt rabbit. The sample size for Hispanics hunting other animals was too small to report reliable estimates. Estimates for hunting elk, squirrel, and rabbit are based on small sample sizes for all subpopulations.

African-American hunters hunt small game (69 percent), which is considerably more than the general hunting population (33 percent). This preference for small game is reflected in their high participation in rabbit hunting (45 percent) and squirrel hunting (37 percent), which is greater than for all other groups of hunters. Sixty-eight percent of African-American hunters hunt big game, and the same percentage also hunts deer. The sample size for elk was too small to report reliable estimates.

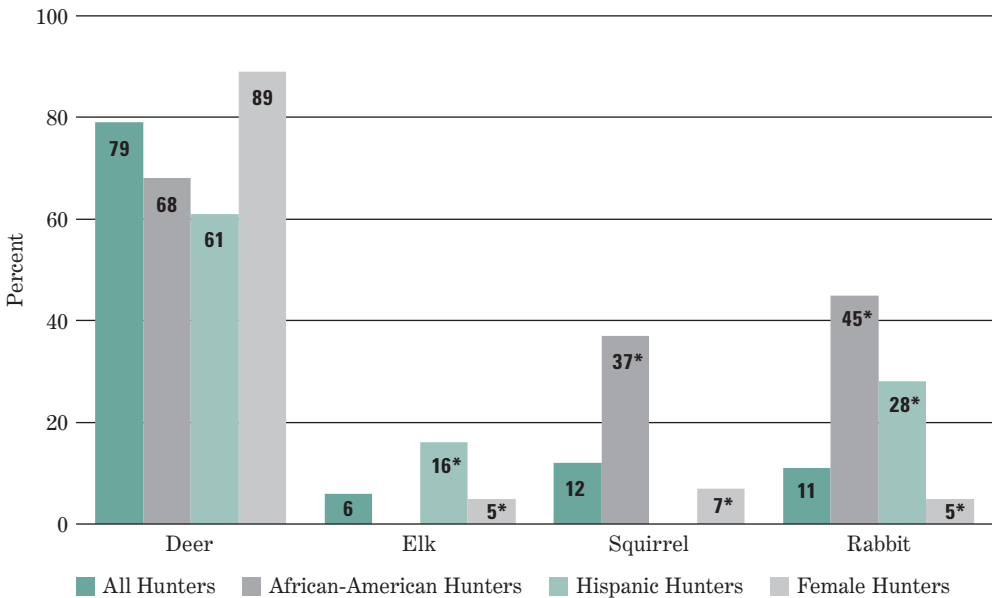
³ Other animals include coyotes, crows, foxes, groundhogs, prairie dogs, raccoons, and similar animals. Other animals may be classified as unprotected or non-game animals by the state in which they are hunted.

Figure 9. Percent of Hunters, by Type of Hunting



**Estimate based on a sample size of 10–29.*
***Some sample sizes for African-American and Hispanic hunters are too small (less than 10) to report data reliably.*

Figure 10. Percent of Hunters, by Selected Game



**Estimate based on a sample size of 10–29.*
***Some sample sizes for African-American and Hispanic hunters are too small (less than 10) to report data reliably.*

Female Hunters

For a more in-depth statistical analysis of hunters, data on participation, expenditures and private/public land preferences are evaluated by age, education, income and place of residence. These comparisons are made between female hunters and all hunters. Due to small sample sizes, African-American and Hispanic hunting populations are not analyzed in further detail.

Female’s Hunting Participation

Only 1 percent of females 16 years of age and over in the United States participated in hunting (see Figure 1) as opposed to 6 percent for the entire population. A comparison of all hunters and female hunters by age, education, income, and place of residency follows.

Hunting participation for females is constant across all age groups, where one or two percent of the female population hunts in each respective age group (Figure 11). This pattern does not hold true for the general population, which has a slightly higher percentage of older hunters in the 35 to 44, 45 to 54, and 55+ age groups (6 percent, 7 percent, and 6 percent, respectively).

As shown in Figure 12, females of all education levels participate at the same rate of 1 percent. The hunting participation rate for the total population is also fairly constant at 5 or 6 percent.

Figure 11. Participation Rates for Hunting, by Age

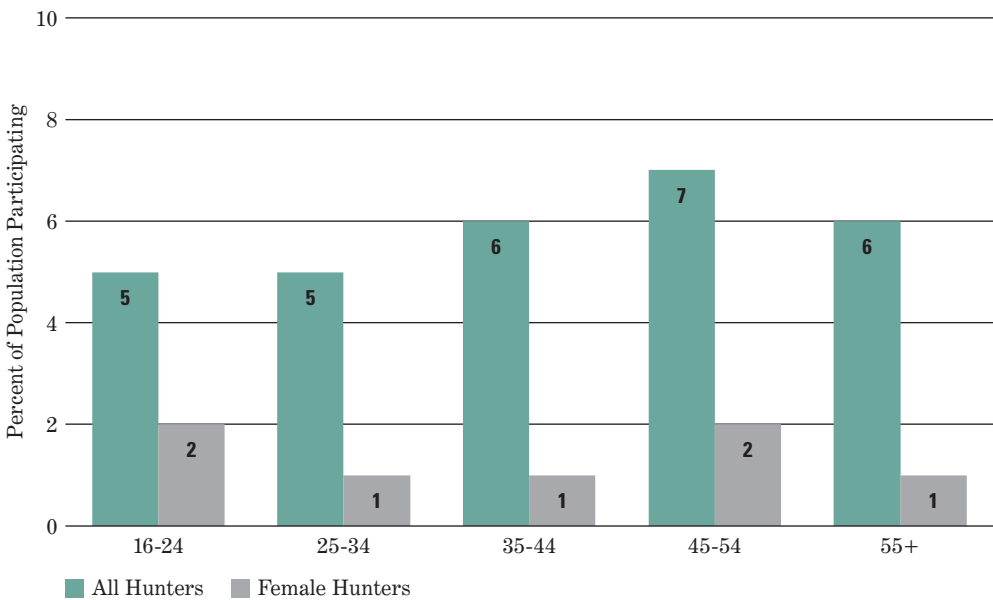
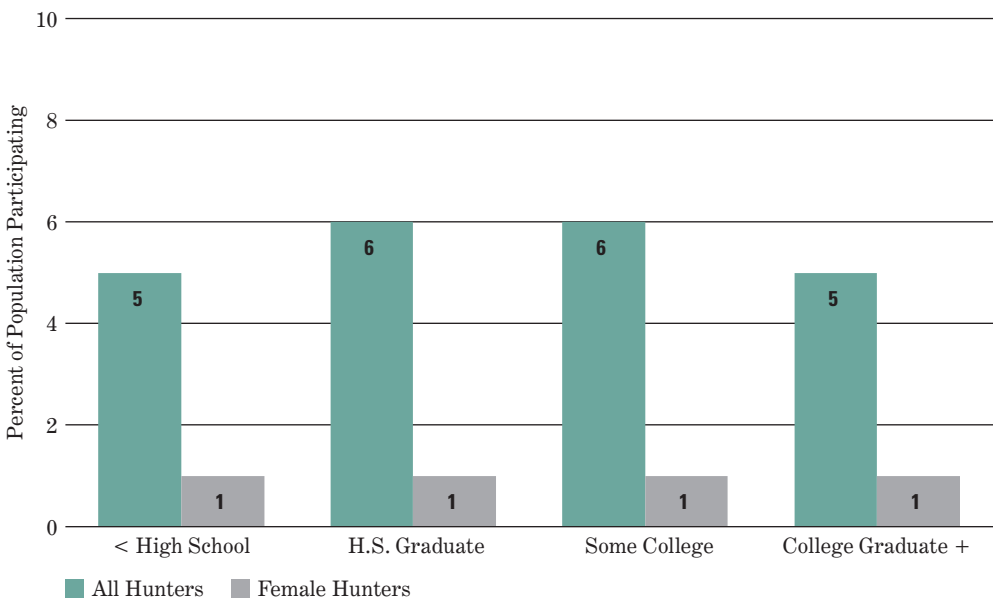


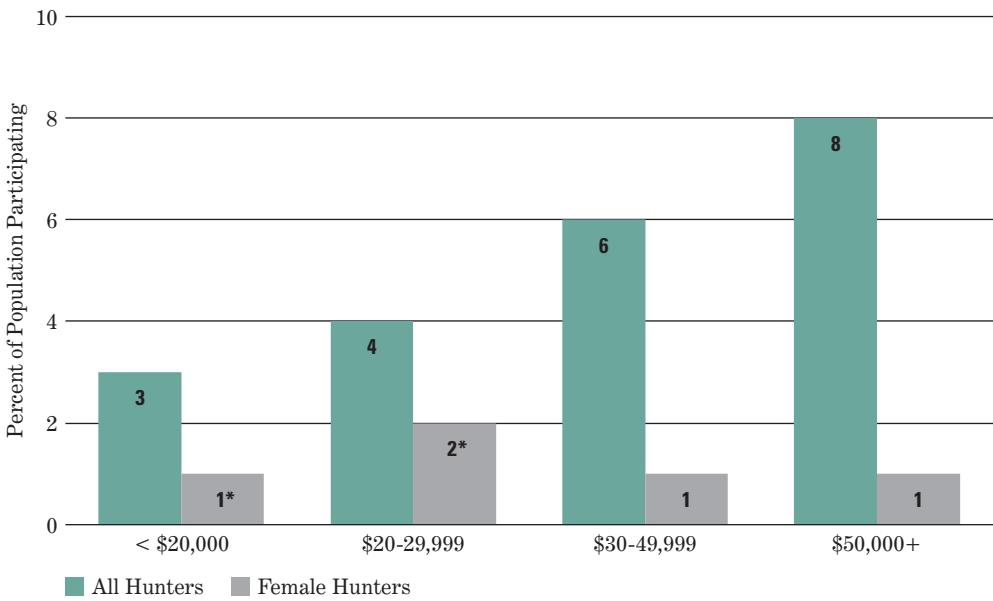
Figure 12. Participation Rates for Hunting, by Education



Hunting participation is positively correlated with income for the total population (Figure 13). Seven percent of the total population earning over \$30,000 annually participates in hunting activities, which is about two times greater than the percentage of the total population earning less than \$30,000 (4 percent). For the female population, the participation rate remains fairly constant across income levels at 1 or 2 percent.

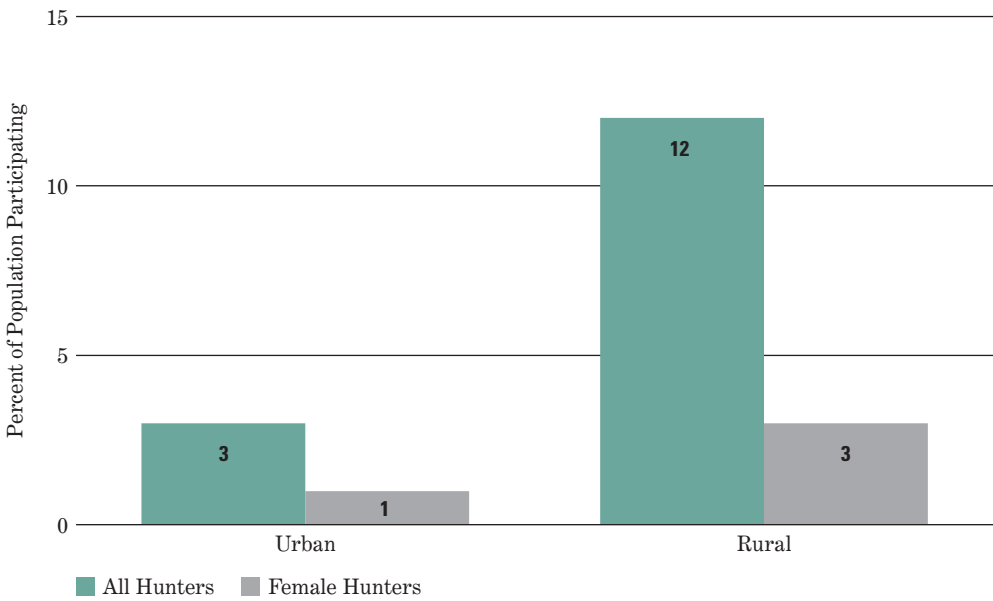
People residing in rural areas are four times more likely to hunt than people living in urban areas (Figure 14). Female hunters living in rural areas are also three times more likely to hunt than females living in urban areas.

Figure 13. Participation Rates for Hunting, by Income



*Estimate based on a sample size of 10–29.

Figure 14. Participation Rates for Hunting, by Place of Residence



Female Hunters – Participation Levels (Days & Trips)

Figures 15 thru 18 compare the mean days for female hunters and all hunters by age, education, income, and place of residence.

Figure 15 shows that female hunters’ mean hunting days are lowest (11 days) for females age 45 to 54, and higher for those in other age groups (14 to 15 days). The mean hunting days for all hunters is lowest for 16 to 24 year-old hunters and for 45 to 54 year-old hunters (19 days), peaks for 25 to 34 year-old hunters (25 days), and generally decreases as hunters age. Similar to the pattern for all hunters, females’ hunting days increase slightly for those with a high school degree (15 days) and decrease for college graduates (10 days) (Figure 16).

Figure 15. Mean Days of Hunting, by Age

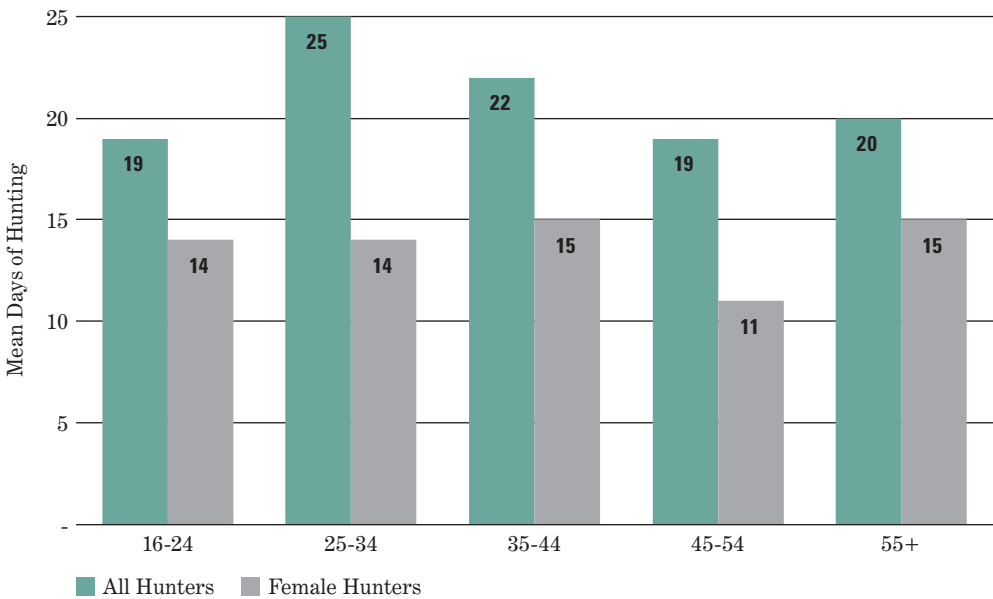
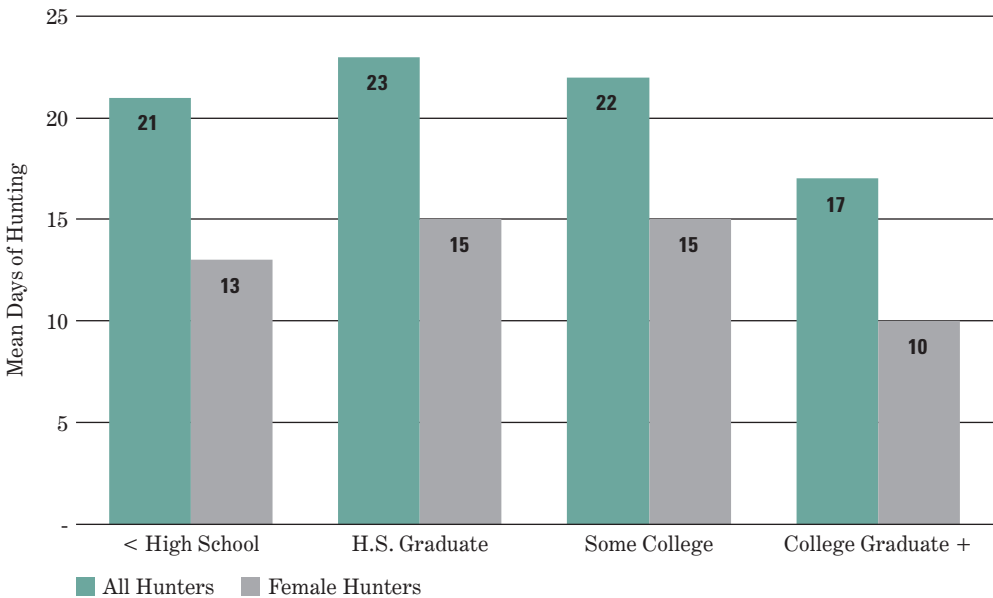


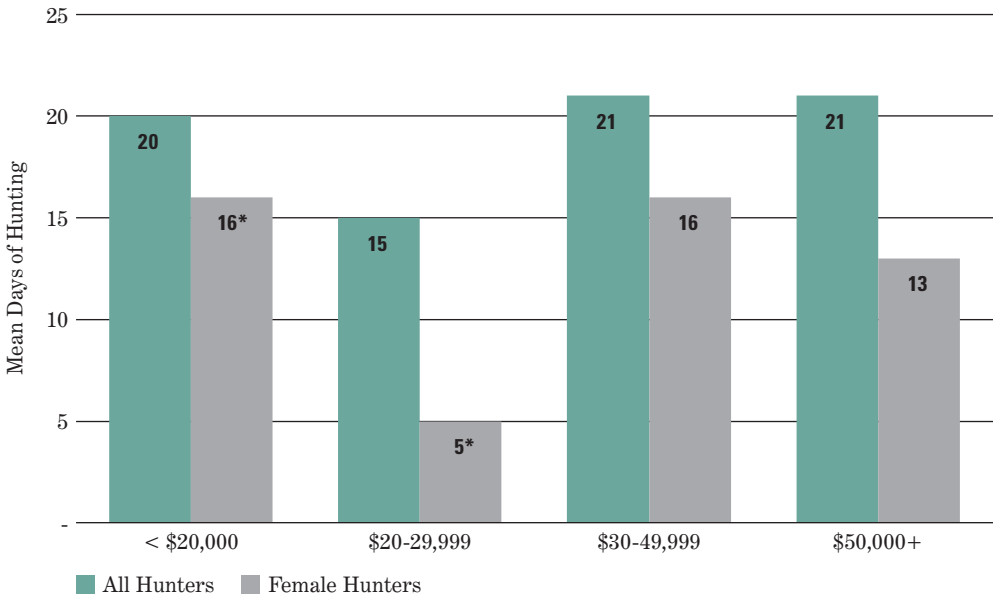
Figure 16. Mean Days of Hunting, by Education



Income level and mean hunting days are depicted in Figure 17. For the most part, females' average hunting days by income level follow the relatively stable trend of activity as shown by the general hunting population. However, the exception occurs at the \$20,000 to \$29,999 income category, where the number of hunting days for all hunters are two-thirds of any other income category and the number of hunting days for females are less than half of any other income category.

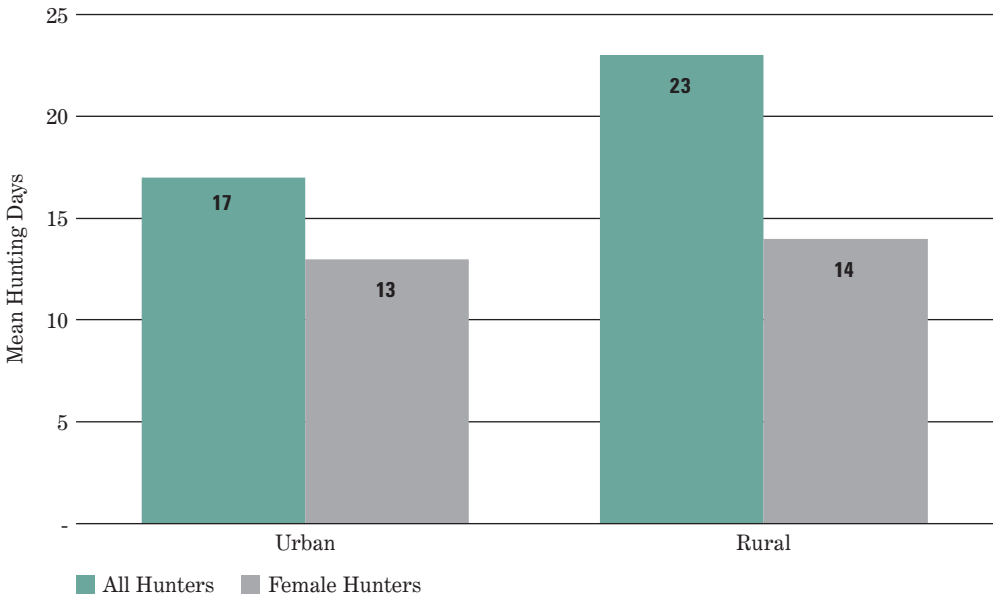
Figure 18 shows that female hunters who live in rural areas hunt slightly more days annually (14 days) than female hunters who live in urban areas (13 days). This is less pronounced than the pattern for all hunters, where hunters in rural areas hunt 23 days annually while hunters in urban areas hunt 17 days annually.

Figure 17. Mean Days of Hunting, by Income



*Estimate based on a sample size of 10–29.

Figure 18. Mean Days of Hunting, by Place of Residence



Figures 19 thru 22 depict various demographic characteristics by the number of annual mean hunting trips in 2011. As shown in these figures, the pattern of mean hunting trips is similar to that of mean hunting days.

Figure 19. Mean Hunting Trips, by Age



Figure 20. Mean Hunting Trips, by Education

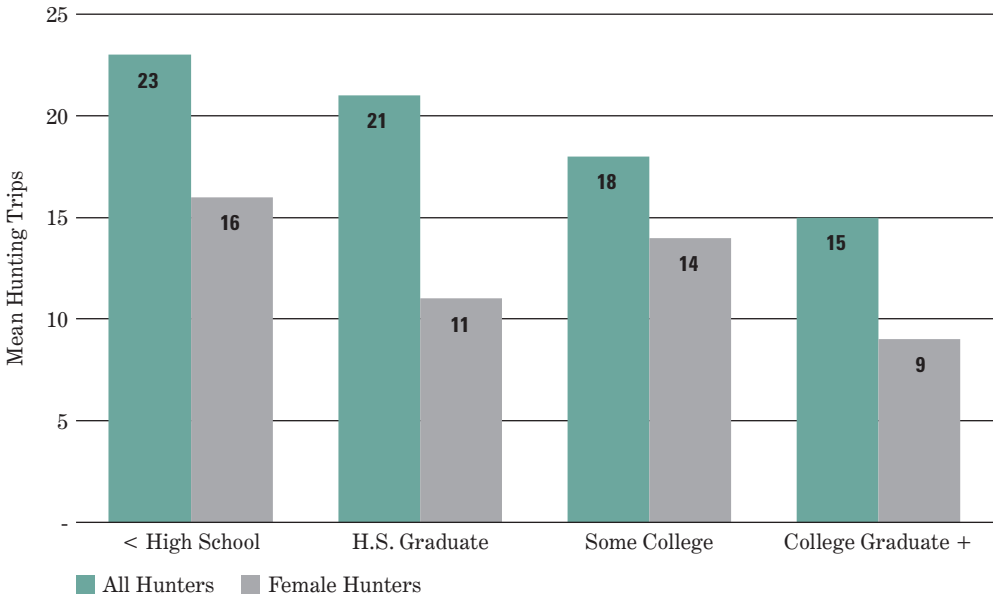
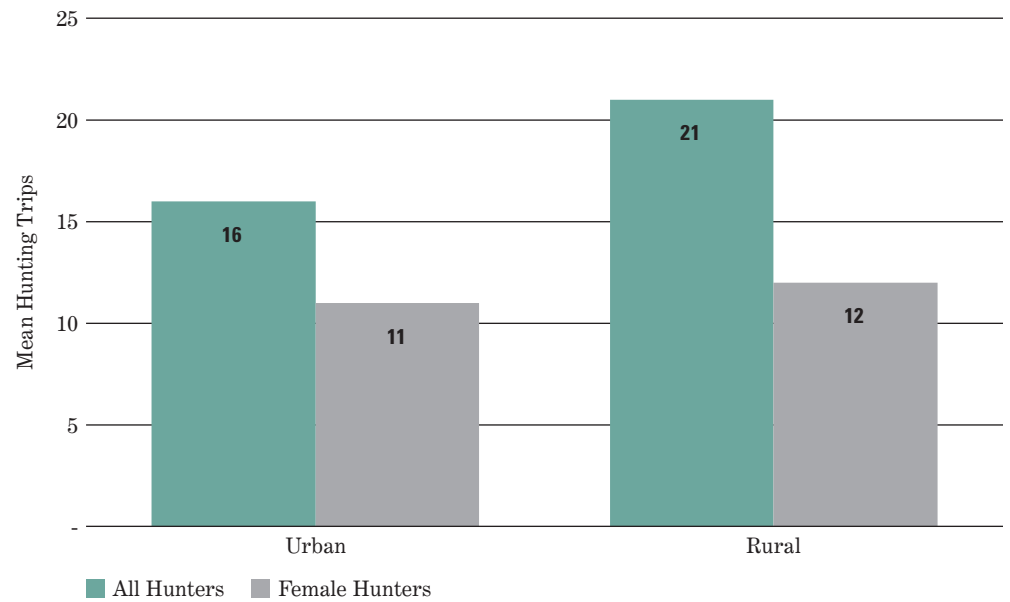


Figure 21. Mean Hunting Trips, by Income



Figure 22. Mean Hunting Trips, by Place of Residence



Females’ Hunting Expenditures

As seen in Figures 5 and 6, female hunters on average spent considerably less for hunting trips and equipment than all hunters. Demographic breakdowns of female hunters’ trip and equipment expenditures identify spending patterns often unrelated to that of all hunters. Mean trip expenditures for female hunters and all hunters are presented in Figures 23 through 26.

Females’ trip expenditures for hunting are higher for those 35 years and older, all else constant (Figure 23). Female hunter expenditures do not follow the same pattern as all hunters.

Trip expenditures for all hunters are positively correlated with both education and income levels (Figures 24 and 25). Thus, as income rises, annual trip expenditures increase from \$335 for those hunters with less than \$20,000 household income to \$564 for those hunters with over \$50,000 household income.

Females’ trip expenditures do not follow the same trends for all hunters by income bracket. Unlike all hunters’ trip expenditures which are positively correlated with income, females’ trip expenditures were highest for those earning less than \$20,000. Females’ annual trip expenditures are less than trip expenditures for all hunters except for the less than \$20,000 category where they are 35 percent higher.

Figure 23. Mean Trip Expenditures, by Age

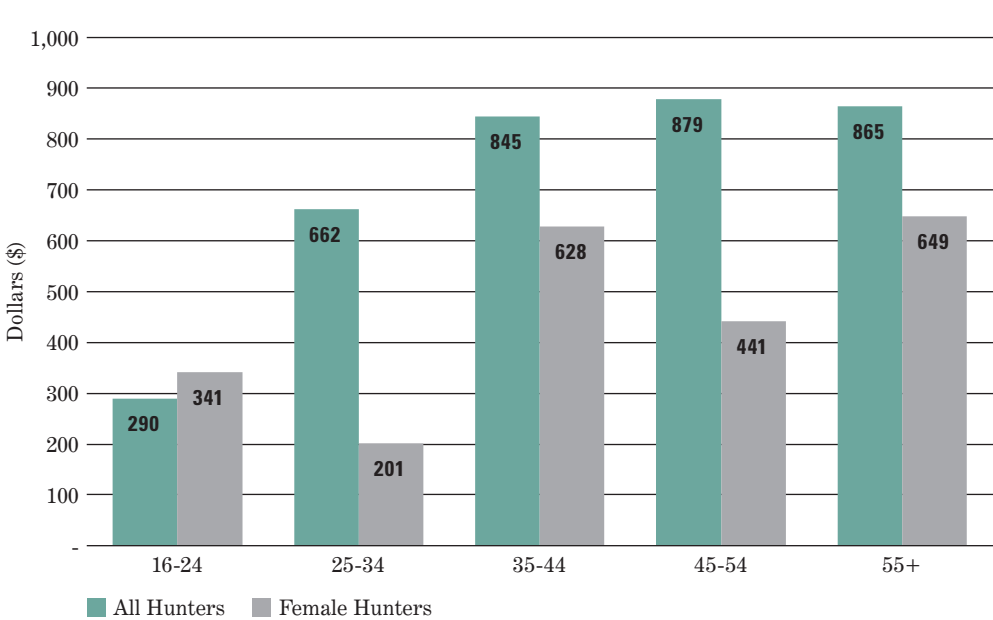


Figure 24. Mean Trip Expenditures, by Income



*Estimate based on a small sample size.

In addition, as education increases, annual hunting trip expenditures increase at about the same rate from \$574 for all hunters without a high school degree to \$860 for those hunters with at least a college degree.

Compared to education, females’ trip expenditures are similar to the all hunters trend where expenditures rise as education increases.

As depicted in Figure 26, mean trip expenditures for female hunters living in urban areas are 21 percent greater than mean trip expenditures for female hunters living in rural areas. This pattern is also represented by all hunters. On average, hunters living in urban areas spent \$862 while hunters in rural areas spent \$689 (a 25 percent difference).

Figure 25. Mean Trip Expenditures, by Education

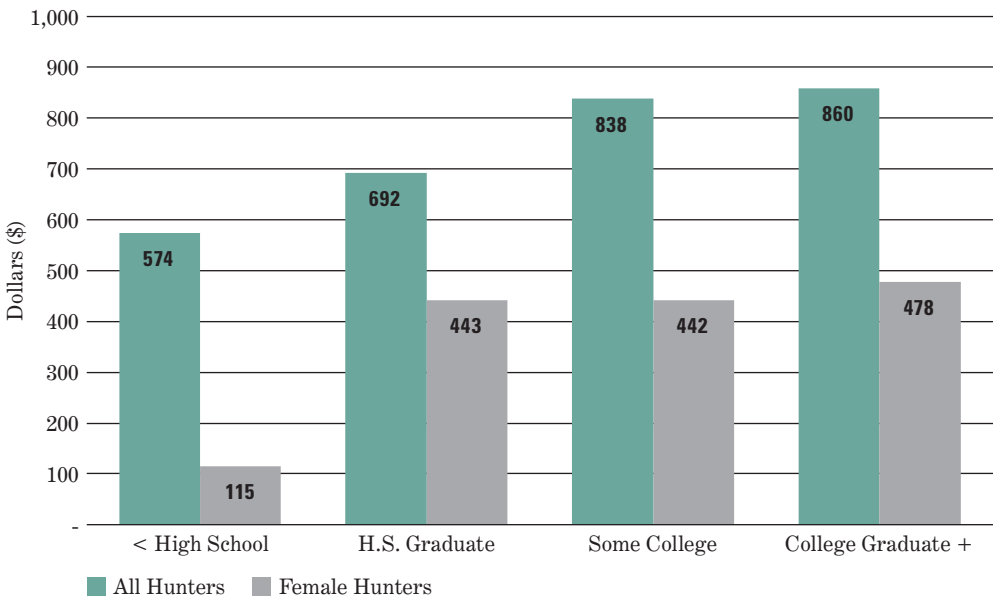
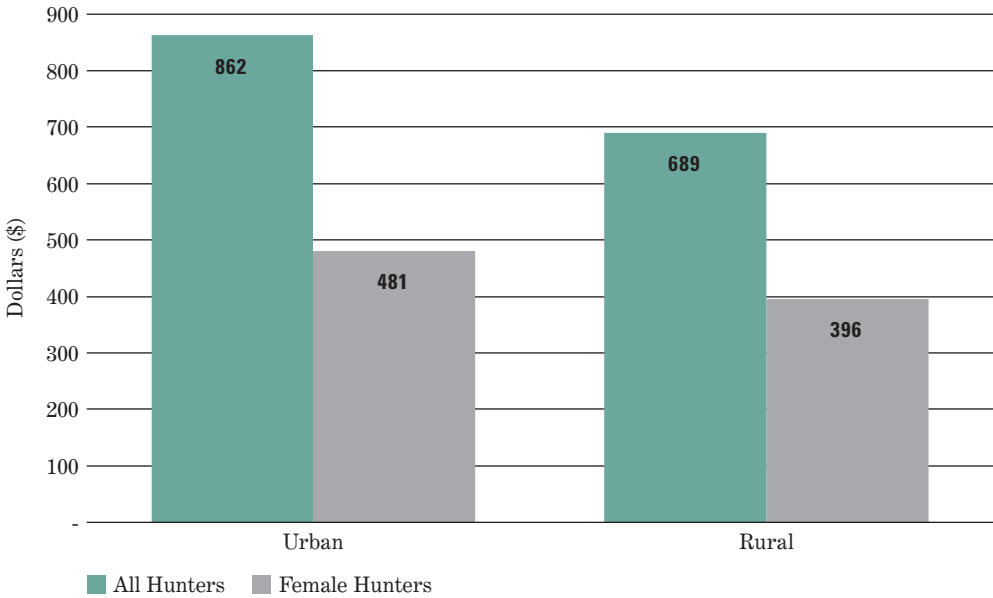


Figure 26. Mean Trip Expenditures, by Place of Residence



Figures 27 thru 30 compare the annual mean equipment expenditures by demographic characteristics for female hunters and all hunters. As with trip expenditures, female hunters' equipment expenditures are less than two-thirds of all hunters' expenditures across nearly all categories. A pattern for equipment expenditures by age emerges for female hunters, showing that equipment expenditures are positively correlated with age (Figure 27).

Figure 28 compares equipment expenditures by education. Females' equipment expenditures do not follow the same positive correlation as all hunters. Equipment expenditures are negatively correlated with education until a college degree is obtained, at which point equipment expenditures increase (\$533).

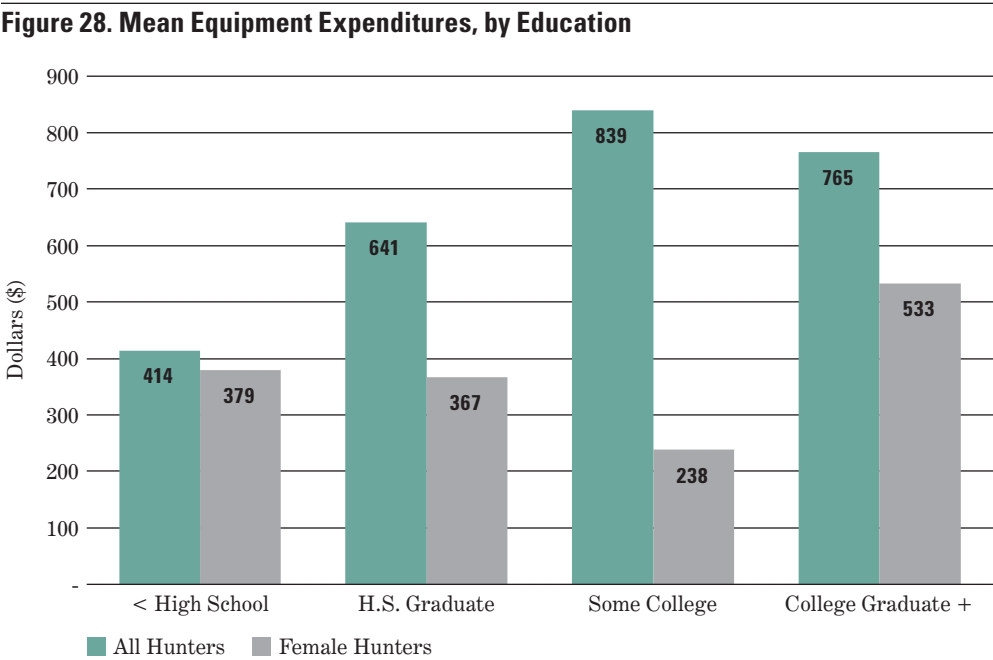
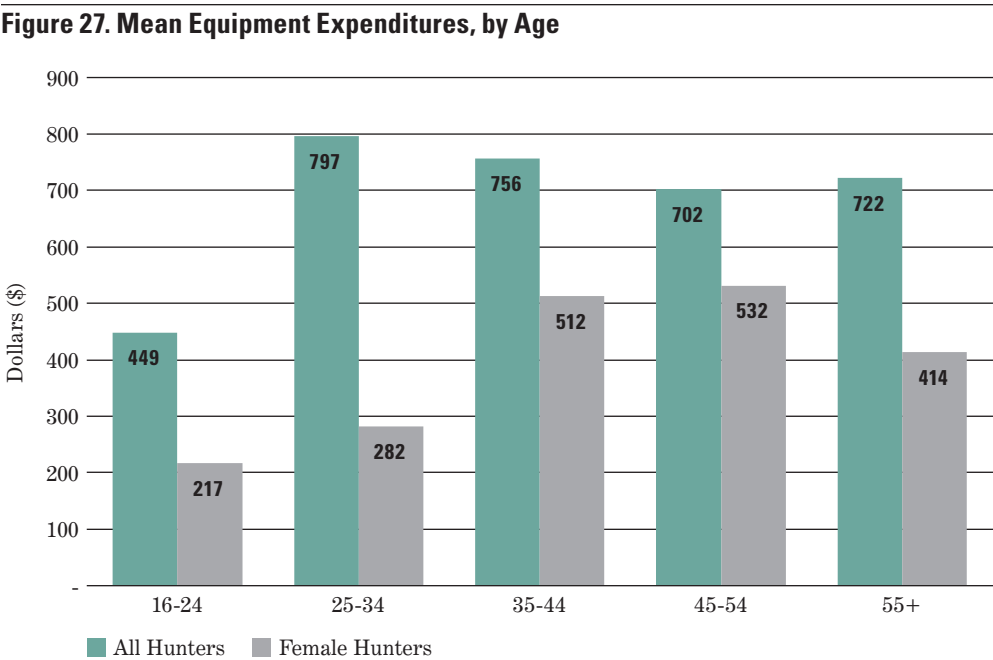
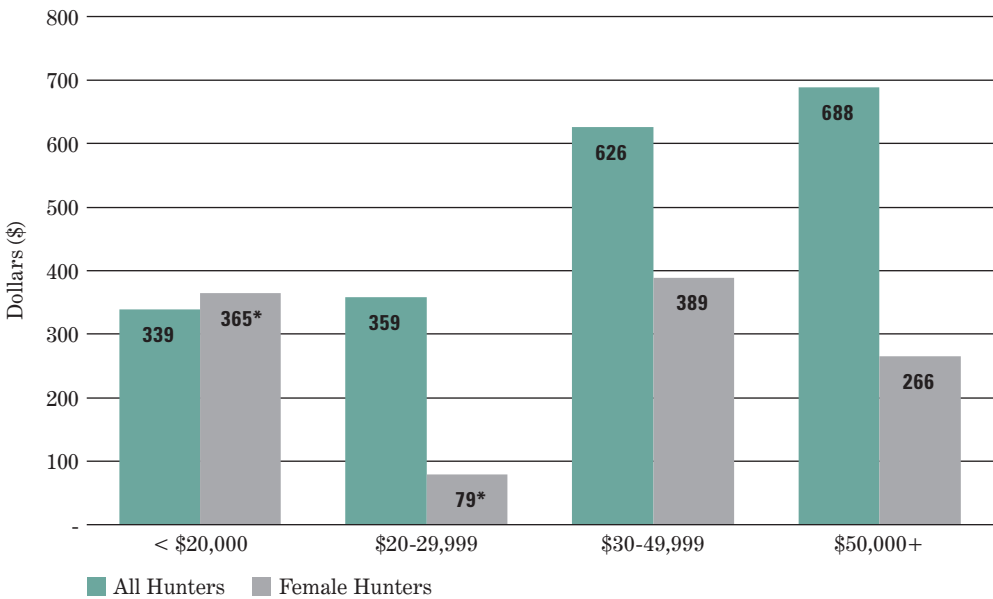


Figure 29 conveys that female hunters' equipment expenditures do not follow the positive correlation with income as for all hunters. Notably less, equipment expenditures for females with \$20,000 to \$29,999 income are 78 percent less than all hunters.

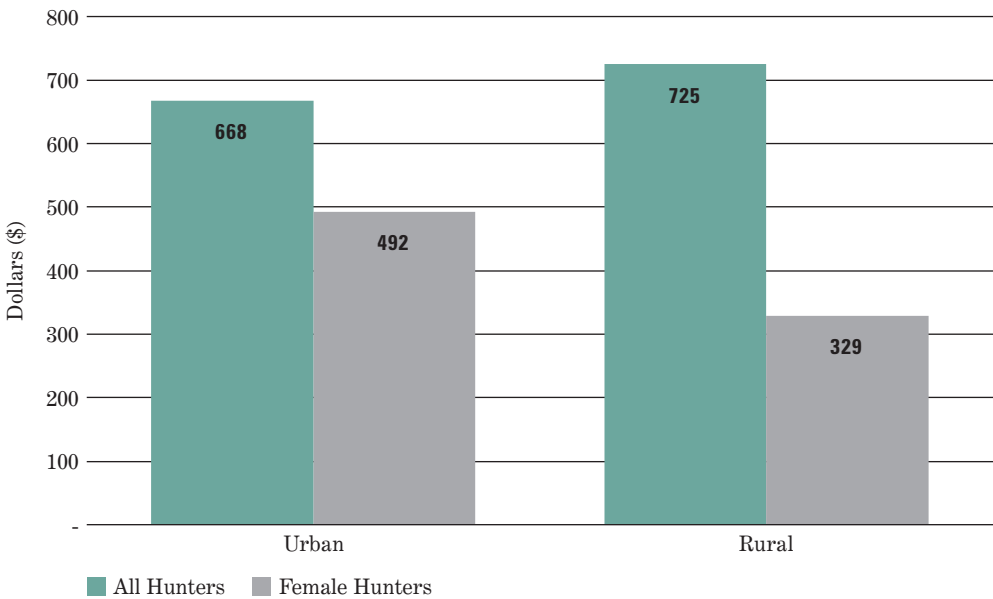
Female hunters' and all hunters' equipment spending do not follow similar patterns, when categorized by place of residence (Figure 30). Female hunters living in urban areas spent \$492 on equipment in 2011 while female hunters living in rural areas spent about 30 percent less (\$329). Conversely, all hunters living in urban areas spent less (\$668) than those hunters living in rural areas (\$725).

Figure 29. Mean Equipment Expenditures, by Income



**Estimate based on a small sample size.*

Figure 30. Mean Equipment Expenditures, by Place of Residence



Females Hunting on Private and Public Land

As shown earlier in Figures 7 and 8, many more female hunters hunt on private land (85 percent) than on public land (27 percent). A demographic analysis follows in Figures 31 thru 38.

Categorizing by age shows that 76 to 86 percent of female hunters of all ages hunt on private land (Figure 31). Similarly, for all hunters as well, between 82 and 88 percent of all hunters in each age group hunt on private land. Figure 32 shows the percentage of hunters hunting on public land, by age. A slight positive correlation emerges for all hunters when participation is categorized by age, increasing from 31 percent to about 38 percent. No trend emerges for female hunters. The highest percent of female hunters hunting on public land (48 percent) are in the 45 to 54 age category but it falls steeply for the over 55 age category (13 percent).

Figure 31. Hunters Hunting on Private Land, by Age

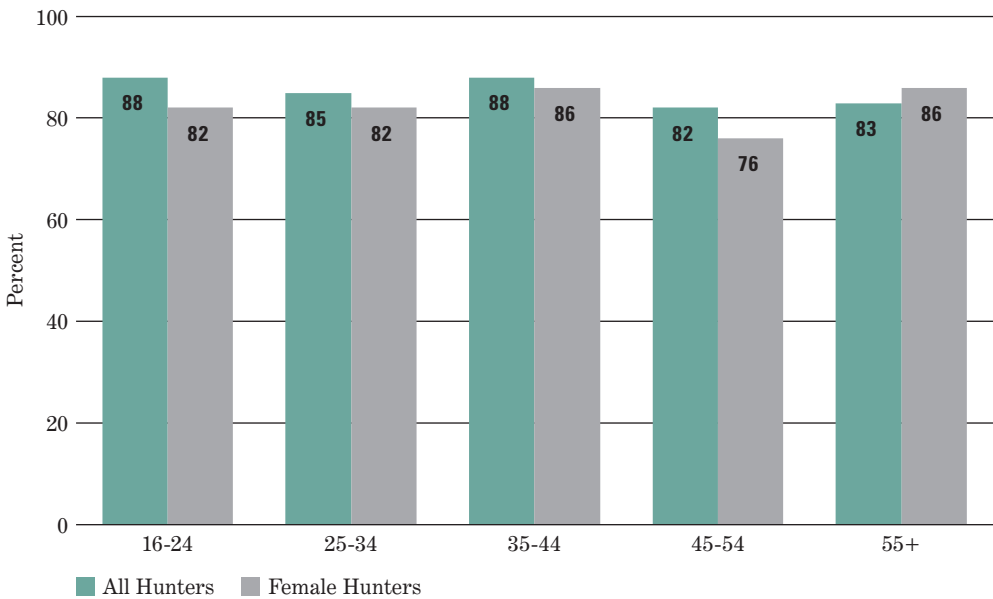


Figure 32. Hunters Hunting on Public Land, by Age

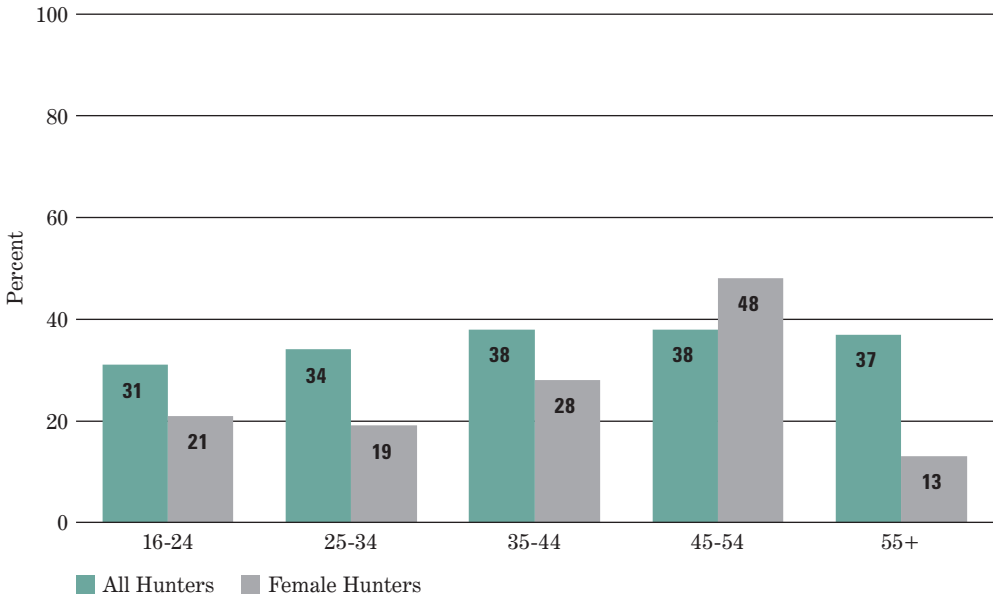


Figure 33 shows that private land hunting by education averages between 80 and 88 percent of all hunters. Hunting on private land for females averages from 72 to 99 percent. Interestingly, 99 percent of female hunters with less than a high school degree hunt on private land. Participation patterns compared by educational achievement do not emerge for hunters on public land (Figure 34). The participation rate for all hunters on public land ranges from 30 percent to 40 percent while the participation rate for females ranges from 19 percent to 40 percent.

Figure 33. Hunters Hunting on Private Land, by Education

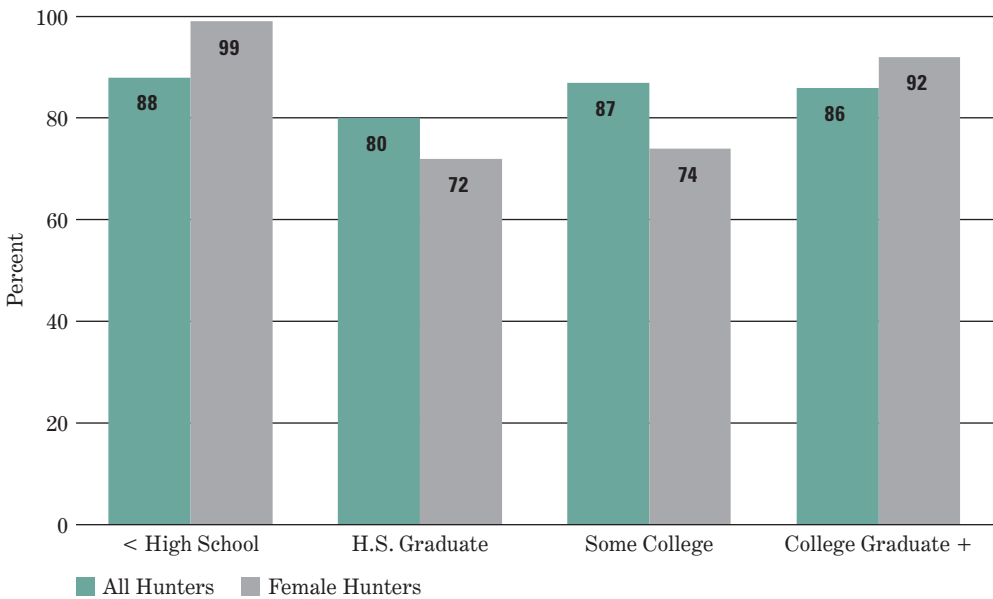
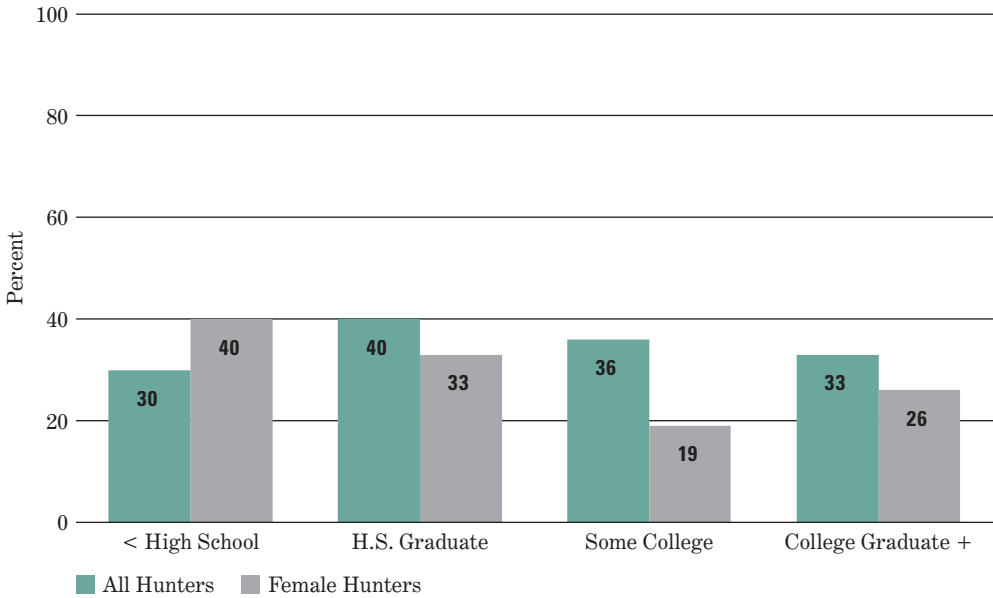
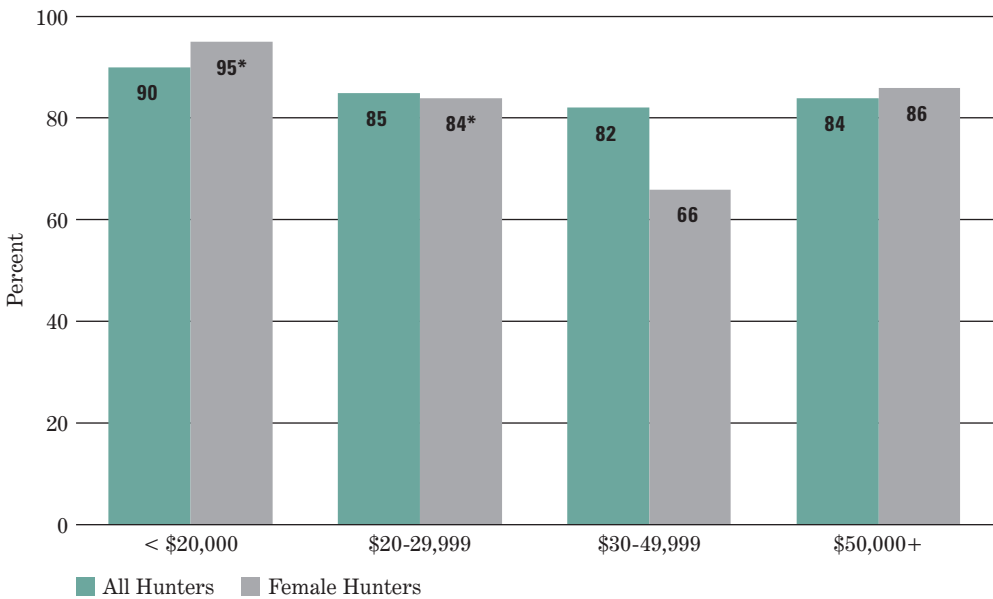


Figure 34. Hunters Hunting on Public Land, by Education



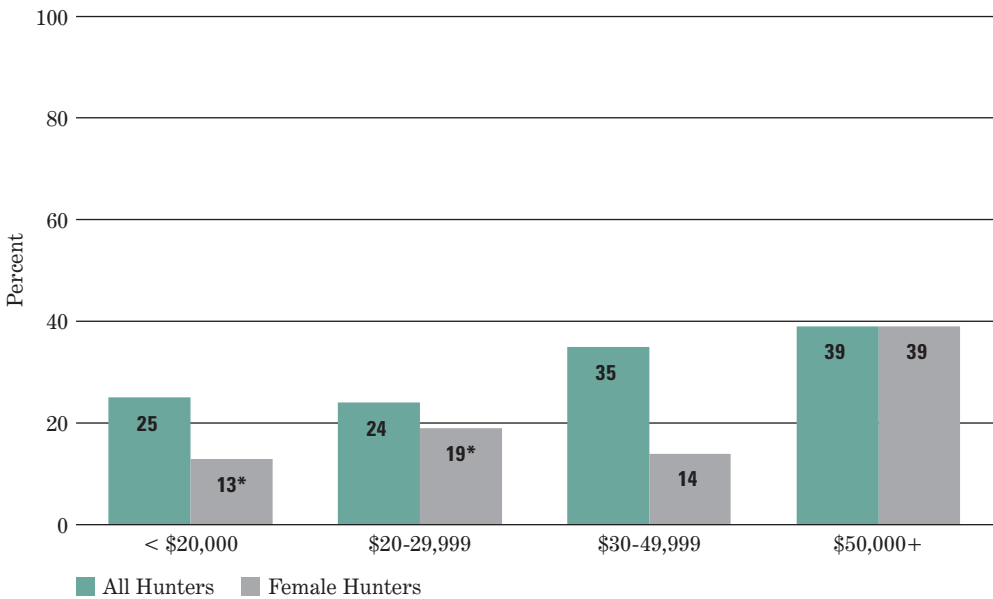
Household income has some impact on hunters' decisions to partake in hunting activities on private land (Figure 35). Participation for all hunters on private land decreased as income increased. The highest participation rate for female hunters on private land was also for those hunters earning less than \$20,000. Figure 36 illustrates the positively correlated relationship between household income and the decision to hunt on public land for all hunters and female hunters.

Figure 35. Hunters Hunting on Private Land, by Income



**Estimate based on a sample size of 10–29.*

Figure 36. Hunters Hunting on Public Land, by Income



**Estimate based on a sample size of 10–29.*

Figures 37 and 38 demonstrate that the highest percent of female hunters hunting on private land are residents of rural areas (86 percent); whereas, the highest percent of female hunters hunting on public land are residents of urban areas (38 percent). For all hunters, the largest percent hunting on private land are also rural residents (88 percent), and the largest percent hunting on public land are urban residents (41 percent).

Figure 37. Hunters Hunting on Private Land, by Place of Residence

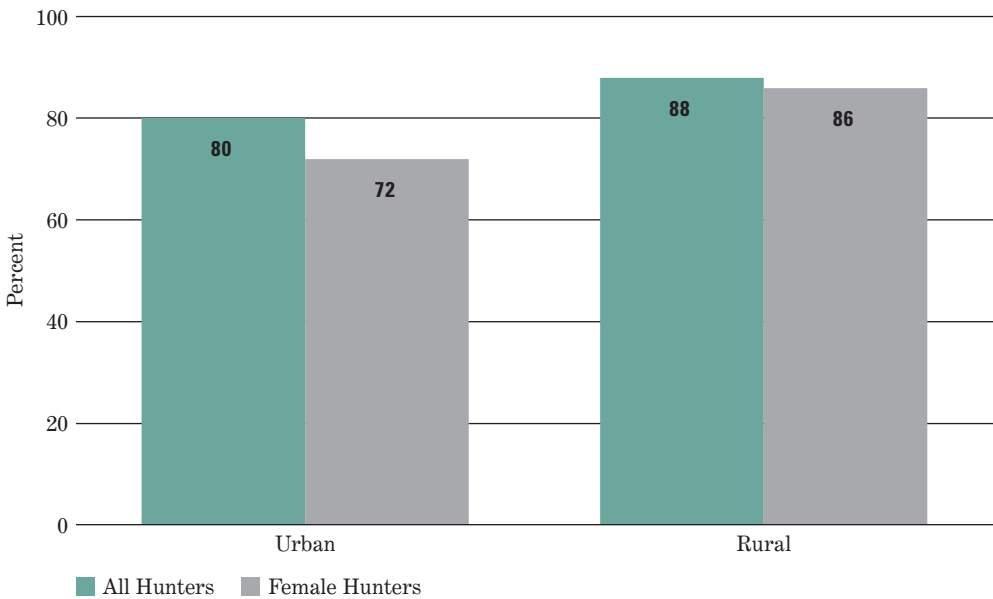
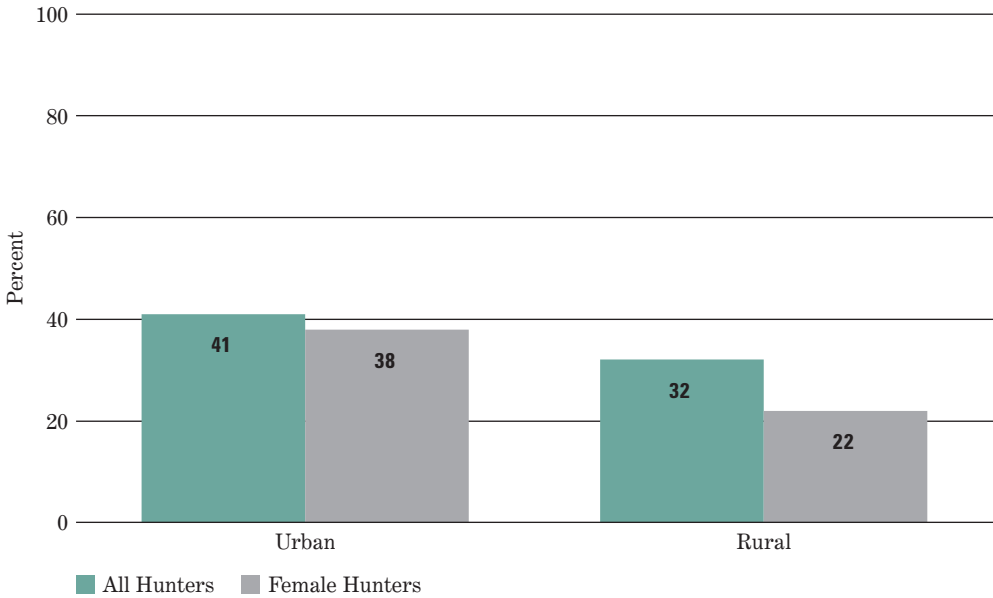


Figure 38. Hunters Hunting on Public Land, by Place of Residence



Hunting Trends 1991, 1996, 2001, & 2011

Table 2 highlights the number of hunting participants, days, and expenditures from the 1991, 1996, 2001, and 2011 Surveys and the percentage change between each year. All expenditures are depicted in 2011 dollars. Two changes are made to the 2001 and 2011 expenditures to be consistent with 1991 and 1996 estimates. First, trip expenditures for 2001 and 2011 are slightly different from those reported in Table 1 because heating and cooking fuel are not included. Second, the 2001 and 2011 equipment expenditures are also slightly different than Table 1 because auxiliary expenditures are excluded to remain consistent with previous reports.

The total number of people hunting and their hunting days between 2001 and 2011 increased by 5 percent and 23 percent, respectively. The increase in hunting participation for African-

American hunters and female hunters outpaces all hunters at 43 and 23 percent over the last decade. Correspondingly, the number of hunting days by female hunters also increased substantially, by 34 percent. Unlike the general hunting population, the number of hunters with Hispanic ethnicity decreased by 37 percent between 2001 and 2011. Hispanic hunters and African-American hunters do not have a significant change in the number of days hunted.

Over the past 10 years, the increase in trip and equipment expenditures have outpaced the rise in the number of hunters. The total number of hunters increased by 5 percent, total trip expenditures increased 55 percent and total equipment expenditures increased by 34 percent. Trip expenditures by African-American hunters and female hunters also rose dramatically and outpaced their growth in participation at

105 percent and 145 percent, respectively. During the same time period, Hispanic hunters' equipment expenditures decreased by 53 percent which is a slightly larger drop than their drop in participation (37 percent).

Between 2001 and 2011, total hunting equipment expenditures increased by 34 percent, and females' hunting equipment expenditures also increased by 70 percent. This change outpaces increases in participation. The equipment expenditures for the total hunting population and female hunters changed only marginally from 1991 to 2001. On the other hand, Hispanic hunters' equipment expenditures, which increased by 69 percent from 1991 to 2001, remained nearly equivalent between 2001 and 2011. There was no significant change for African-American hunters for equipment expenditures.

Table 2. Hunting Comparison: Participants, Days, & Expenditures in 1991, 1996, 2001, & 2011
(Numbers in thousands, 2011\$)

	Annual Estimates				Percentage Change*			
	1991	1996	2001	2011	1991 to 2001	1991 to 2011	1996 to 2011	2001 to 2011
Hunters								
Total Hunters	14,006	13,975	13,034	13,674	-7	-	-	5
African-American	294	303	288	413		40	36	43
Hispanic	274	335	428	271	56	-	-	-37
Females	1,069	1,192	1,189	1,457		36	22	23
Days								
Total Days	235,806	256,676	228,367	281,884	-	20	10	23
African-American	5,499	4,839	5,382	6,368	-	-	-	-
Hispanic	3,229	4,363	5,139	3,846	59	-	-	-
Females	13,512	13,074	14,068	18,826	-	39	44	34
Hunting Expenditures								
Total Trip Expenditures**	\$5,696,321	\$7,013,001	\$6,574,202	\$10,215,230	15	79	46	55
African-American	\$109,254	\$117,133	\$134,542	\$275,647	-	152	135	105
Hispanic	\$83,581	\$265,547	\$292,599	\$136,690	250	-	-49	-53
Females	\$306,346	\$314,411	\$246,308	\$602,451	-	97	92	145
Total Equipment Expenditures***	\$5,436,999	\$7,945,855	\$5,793,937	\$7,738,324	-	42	-	34
African-American	\$84,470	\$124,844	\$117,321	\$104,715	-	-	-	-
Hispanic	\$92,620	\$165,003	\$156,683	\$129,064	69	-	-	-
Females	\$246,063	\$324,612	\$244,099	\$414,608	-	68	-	70

*A hyphen denotes that the percentage change is not different from zero at the 90 percent confidence level.
**For this table, trip expenditures for 2001 and 2011 are calculated the same way as 1991 and 1996 were calculated. Thus, they don't include cooking fuel. This is different from the rest of the analysis throughout the document.
***These 2001 and 2011 equipment expenditures are calculated the same way as the equipment expenditures for 1991 and 1996 were calculated. They do not include auxilliary or special equipment. This is different from the 2011 analysis, where equipment expenditures do include auxilliary equipment.

Fishing

Overview

Table 3 highlights the total number of anglers, total and mean fishing days, fishing trips, trip expenditures and equipment expenditures for African-American, Hispanic, females, and all anglers. Females are the largest subpopulation (8.9 million), and they spend the most money (\$4.9 billion on trip and equipment expenditures). However, on average, Hispanics anglers spend more than African-American or female anglers. Hispanic anglers spend 38 percent more than African-American anglers and 42 percent more than female anglers on total trip expenditures. Hispanic anglers and African-American anglers spend about the same amount on mean equipment expenditures (\$165 and \$168, respectively). African-American anglers spend more days fishing (17 days) and take more trips (14) on average than Hispanic anglers and female anglers.

Table 3. Anglers Days, Trips and Expenditures: 2011

(Includes anglers 16 years of age and older. Numbers in thousands, except averages.)

	<i>All Anglers</i>	<i>African-American Anglers</i>	<i>Hispanic Anglers</i>	<i>Female Anglers</i>
Anglers	33,112	2,264	1,675	8,885
Days of Fishing	553,841	37,019	24,462	105,841
Mean Days of Fishing	17	17	15	12
Trips	455,005	30,583	22,048	86,699
Mean Fishing Trips	14	14	13	10
Total Fishing Expenditures	\$29,038,225	\$1,293,784	\$1,358,081	\$4,880,413
Trip Expenditures	\$21,789,465	\$920,680	\$1,076,181	\$3,679,719
Mean Trip Expenditures	\$679	\$425	\$647	\$438
Equipment Expenditures	\$7,248,760	\$373,104	\$281,901	\$1,200,693
Mean Equipment Expenditures	\$219	\$165	\$168	\$135



USFWS

Fishing Participation

Figure 39 shows the fishing participation rates (the percent of the subpopulation in the U.S. that fished in 2011) for persons age 16 and older for the total population, African-Americans, Hispanics, and females. All subpopulations participate at remarkably lower rates than the population as a whole for general fishing and freshwater fishing. For general fishing participation rates, African-American anglers have the highest participation rate (10 percent) followed by female anglers (7 percent) and Hispanic anglers (5 percent). African-Americans also have the highest participation rate for freshwater fishing (7 percent) and saltwater fishing (3 percent).

In Figures 40 thru 43, participation is analyzed by age, education, income, and place of residence. Participation rates are determined by dividing the number of anglers in each subcategory by the number of people in the U.S. in each subcategory.

For all anglers, fishing participation increases with age until the 55+ age category, after which, fishing participation decreases with age (Figure 40). Participation rates for the subpopulations do not follow a similar trend.

Figure 39. Participation Rates for Fishing

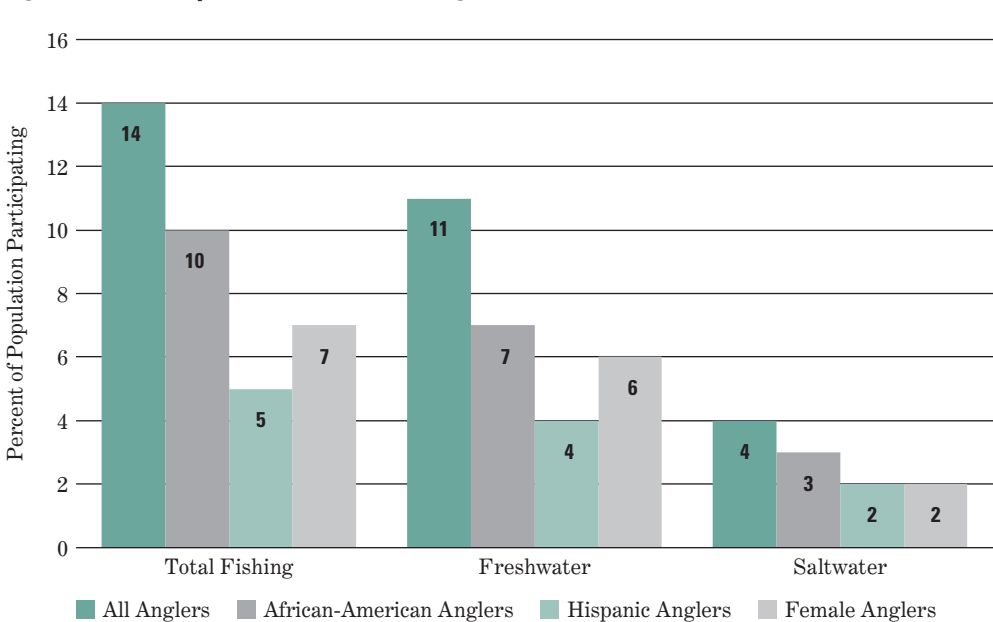
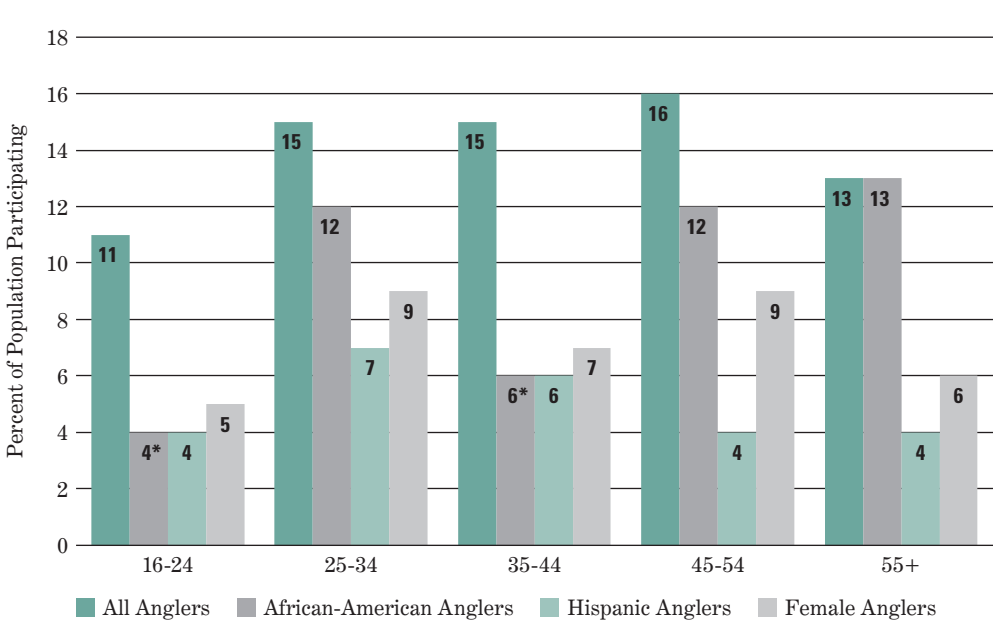


Figure 40. Participation Rates for Fishing, by Age



*Estimate based on a small sample size.

Figure 41 depicts the association between fishing participation rates and educational attainment. No trends emerge for fishing participation rates for Hispanic anglers. For all anglers and female anglers, however, participation in fishing increases with educational achievement. The opposite is true for African-American anglers, where participation in fishing decreases with educational achievement.

Figure 42 shows that participation is positively correlated with income for all anglers and female anglers. That is, as household income increases, the rate of participation for each group also increases. African-American anglers follow this trend for the most part except that participation decreases for those earning more than \$50,000. For Hispanic anglers, participation slightly decreases for those earning between \$30,000 and \$49,999 annually.

Figure 41. Participation Rates for Fishing, by Education

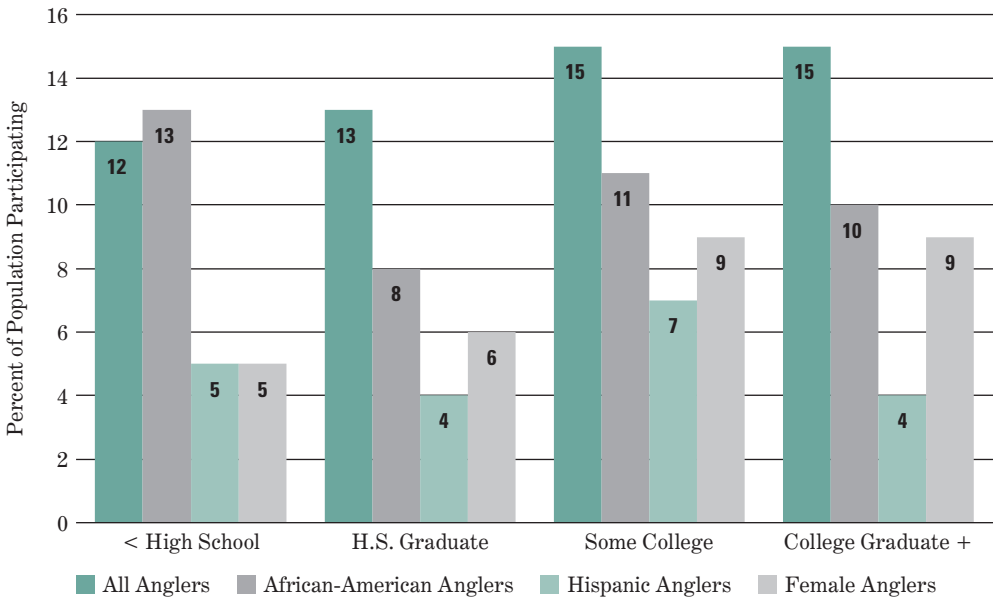
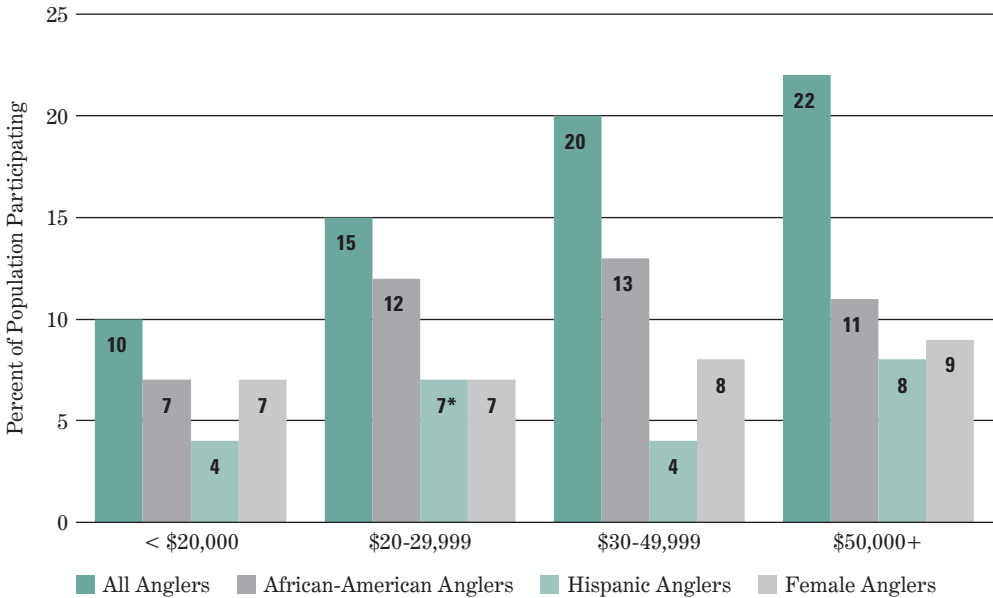


Figure 42. Participation Rates for Fishing, by Income



*Estimate based on a sample size of 10–29.

Participation by place of residence is illustrated in Figure 43. For all populations, rural residents were more likely to participate in fishing than urban residents.

Regional Distribution of Anglers

Several topics reported in this study such as type of fishing and species sought are highly variable by region of the country. Figure 44 shows the percent of each angler subpopulation that resides in the Northeast, the South, the Midwest, and the West. As a whole, the majority of anglers (38 percent) live in the South. The South also has the highest shares of African-American (71 percent), female anglers (42 percent), and Hispanic anglers (43 percent). All regions have nearly the same share of female anglers as all anglers. The Northeast has the lowest share of all anglers (15 percent) and low shares for all subpopulations.

Figure 43. Participation Rates for Fishing, by Place of Residence

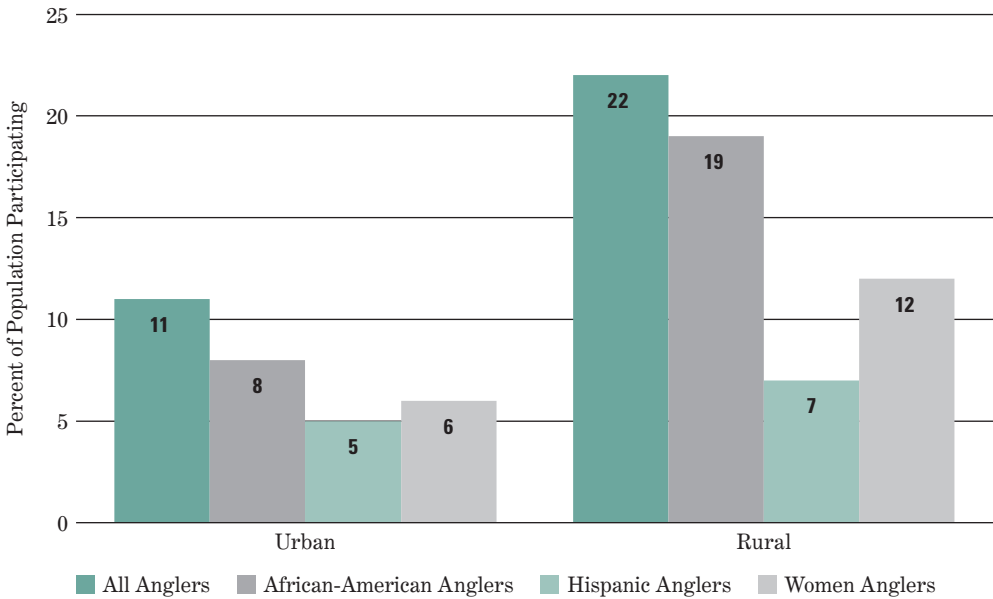
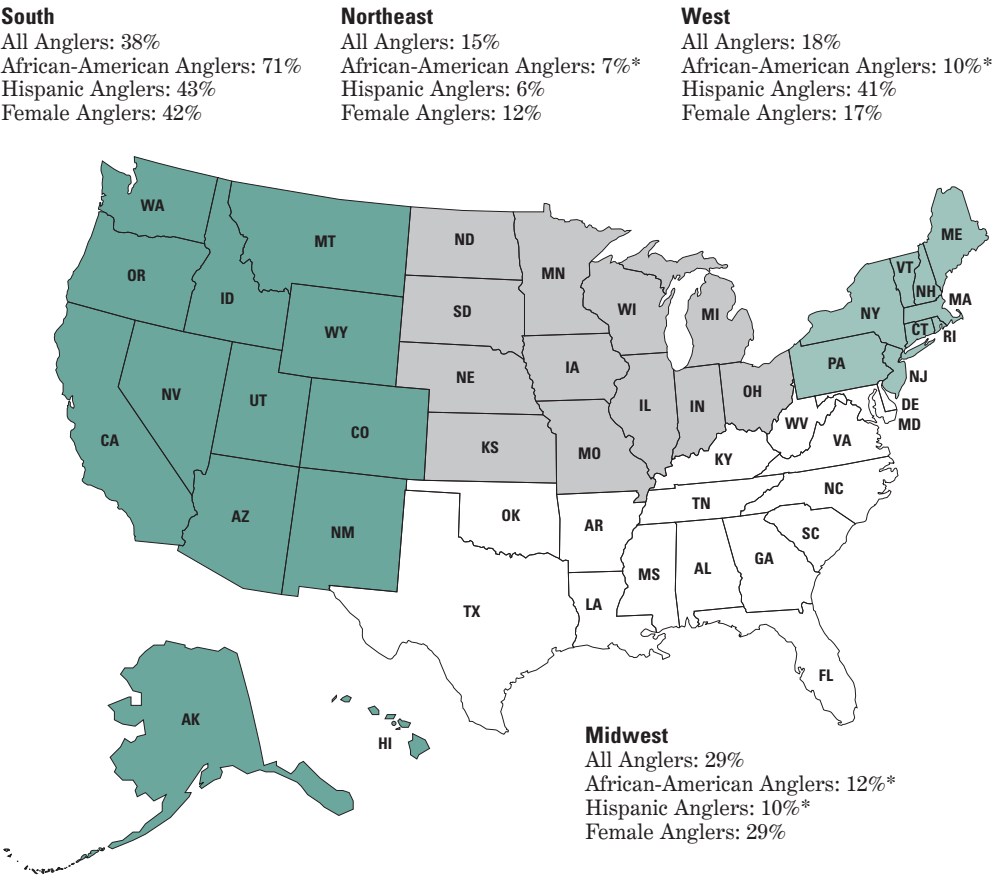


Figure 44. Where do they live? Regional Distribution of Anglers.



*Estimate based on a small sample size.

Fishing Avidity & Expenditures

In terms of resource management and economic impacts, how often people fish is as important a question as how many people fish. Thus, the following information is presented on the mean number of fishing days, the mean number of fishing trips, the mean trip expenditures⁴, and the mean equipment expenditures for anglers⁵.

Figures 45 and 46 represent mean fishing days and mean fishing trips, respectively. African-American anglers, on average, spend more days fishing (17 days), followed by Hispanic anglers (15 days) and female anglers (12 days). African-American anglers also take more fishing trips on average (14 trips) than Hispanic anglers (13 trips) and female anglers (10 trips). Comparing fishing days to fishing trips, very few trips are multi-day angling trips.

⁴ Trip expenditures are composed of food, drink, lodging, public and private transportation, guide fees, pack trip or package fees, public and private land use access fees, boat fuel, launching, mooring, storage, maintenance, insurance fees, bait, ice, and equipment rental.

⁵ Equipment expenditures are made up of rods, reels, lines, lures, tackle boxes, creels, stringers, fish nets, minnow traps, seines, bait containers, depth and fish finders, ice and spear fishing equipment. Also included are auxiliary camping equipment such as binoculars, special fishing clothing, processing and taxidermy costs. Special equipment such as boats, campers, trucks and cabins are excluded from equipment expenditures due to small sample sizes and to remain consistent with the equipment expenditure analysis for hunters in the preceding section.

Figure 45. Mean Days of Fishing

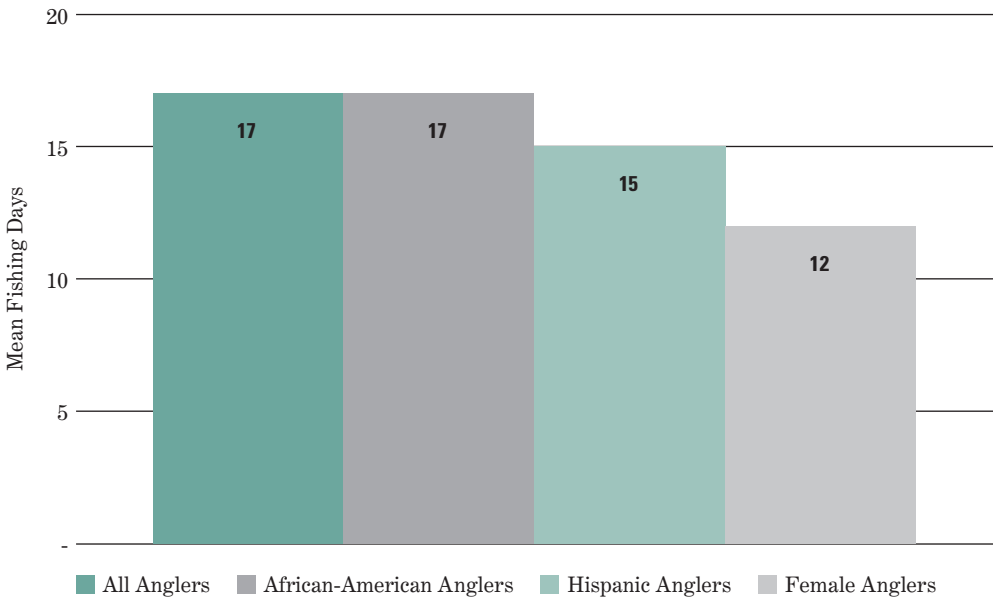


Figure 46. Mean Fishing Trips

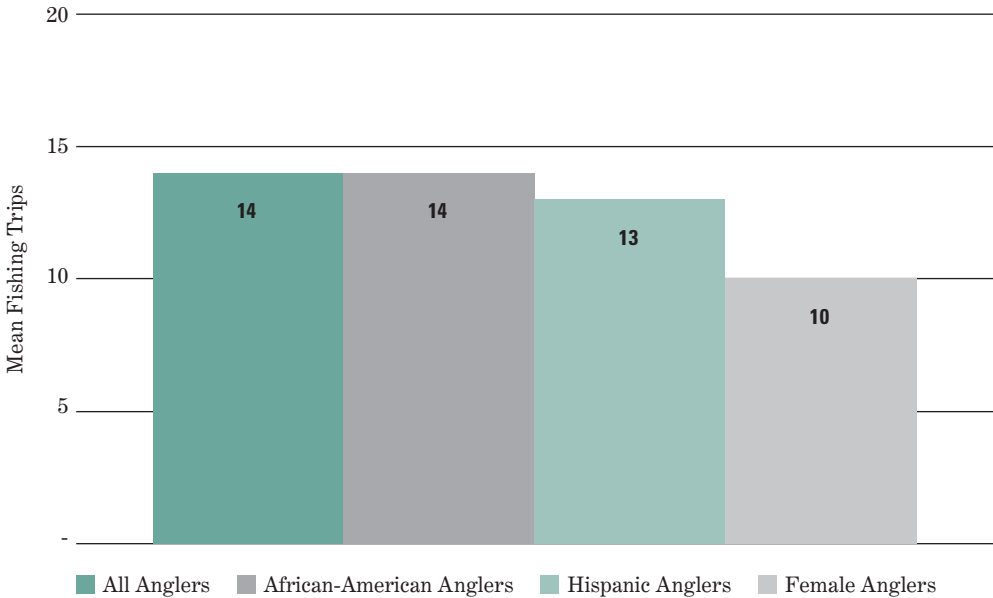


Figure 47 shows mean annual fishing trip expenditures, and Figure 48 shows mean equipment expenditures. Hispanic anglers spend, on average, \$647 on trip-related expenditures and \$168 on equipment. These expenditures are larger than African-American and female expenditures.

African-American anglers and female anglers spend about the same amount on trip-related fishing expenses (\$425 and \$438, respectively). For fishing equipment, African-American anglers spend more (\$165) than female anglers spend (\$135).

Figure 47. Mean Trip Expenditures for Anglers

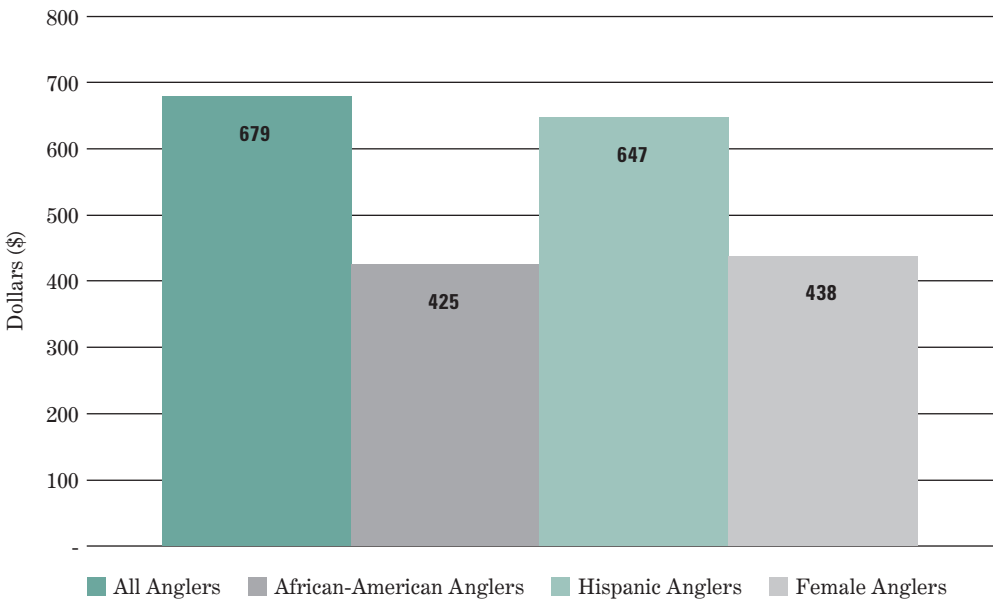
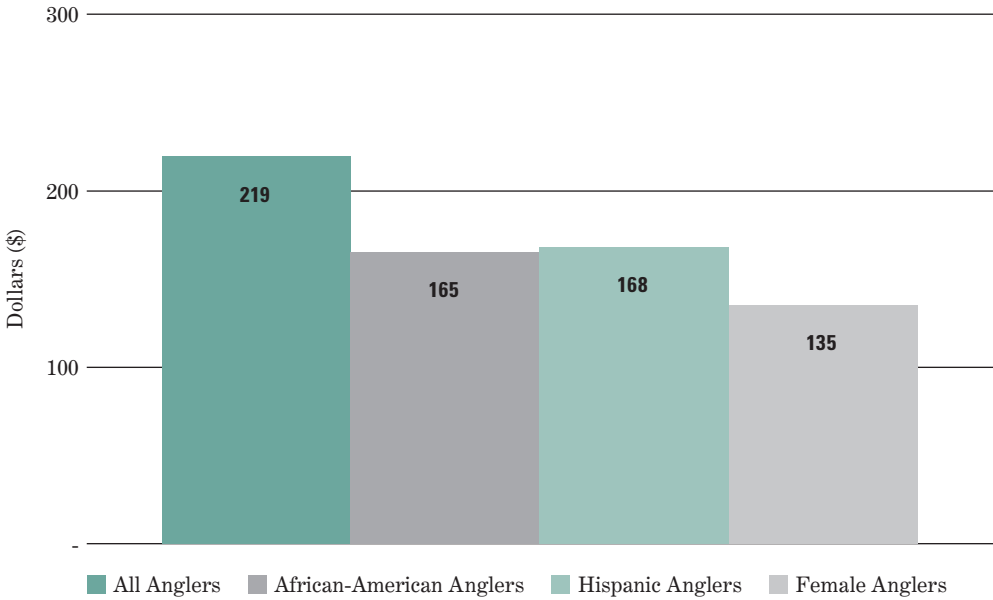


Figure 48. Mean Equipment Expenditures for Anglers



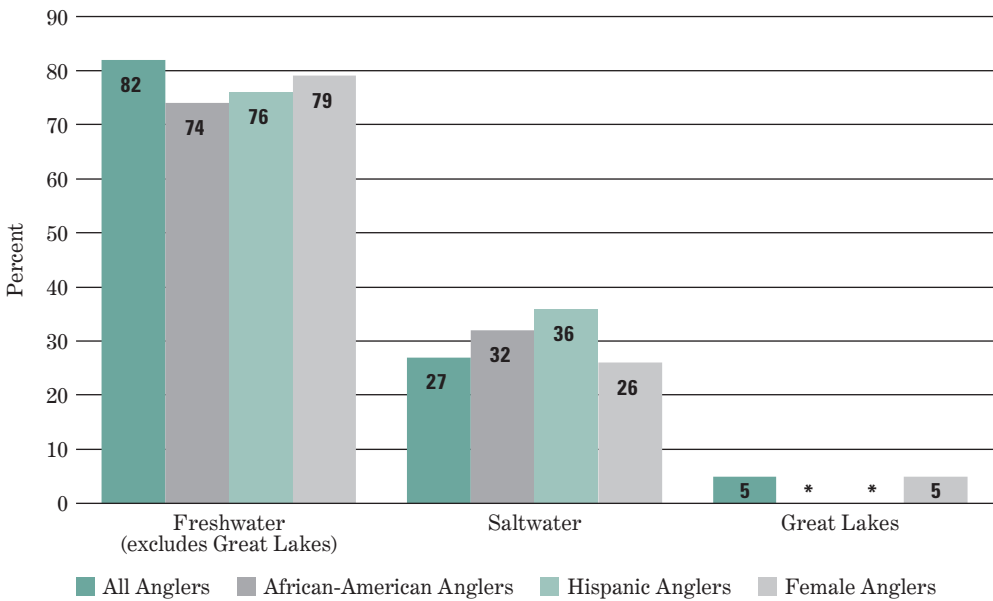
Types of Fishing and Selected Species

Figure 49 shows the percent of each angler subpopulation that participate in Great Lakes, saltwater, and other freshwater fishing (excluding Great Lakes fishing). Other freshwater fishing is the most popular type of fishing with at least 74 percent of each angler subpopulation participating. The subpopulation with the smallest percentage of anglers to fish other freshwater is African-American anglers at 74 percent.

Participation in saltwater fishing is lower than freshwater fishing participation. Only 27 percent of all anglers fish in saltwater. However, a relatively large percentage of Hispanic anglers (36 percent) participate in saltwater fishing. This is greater than African-American anglers (32 percent) and female anglers (26 percent).

Participation in Great Lakes fishing is low for all subpopulations of anglers. Only 5 percent of all anglers and female anglers fish in the Great Lakes. The sample sizes for African-American anglers and Hispanic anglers fishing in the Great Lakes were too small to report reliably.

Figure 49. Percent of Anglers, by Type of Fishing



*Sample sizes were too small to report reliably for Hispanic and African-American angling at the Great Lakes.



USFWS

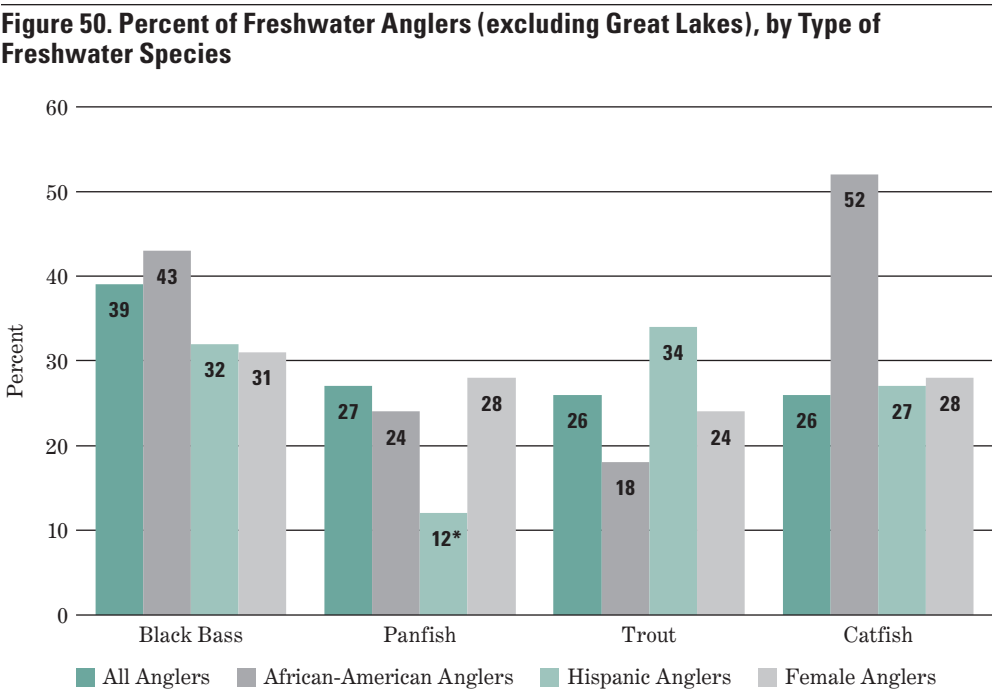
Figures 50 and 51 depict the percentage of each angler subpopulation that pursue popular freshwater and saltwater fish species. Great Lakes fishing is not included. For purposes of comparison, the percentage of all freshwater anglers and the percentage of all saltwater anglers that pursued each species is presented in each figure. As depicted in Figure 49, excluding the Great Lakes, 82 percent of all anglers fish in freshwater. While participating in freshwater fishing, black bass, panfish, trout, and catfish are the species most often targeted.

For African-American freshwater anglers, catfish is the most pursued species (Figure 50). Fifty-two percent of African-American freshwater anglers fish for catfish, more than any other subpopulation. Many African-American freshwater anglers also fish for black bass (43 percent). However, only 24 percent of African-Americans fish for panfish and 18 percent fish for trout.

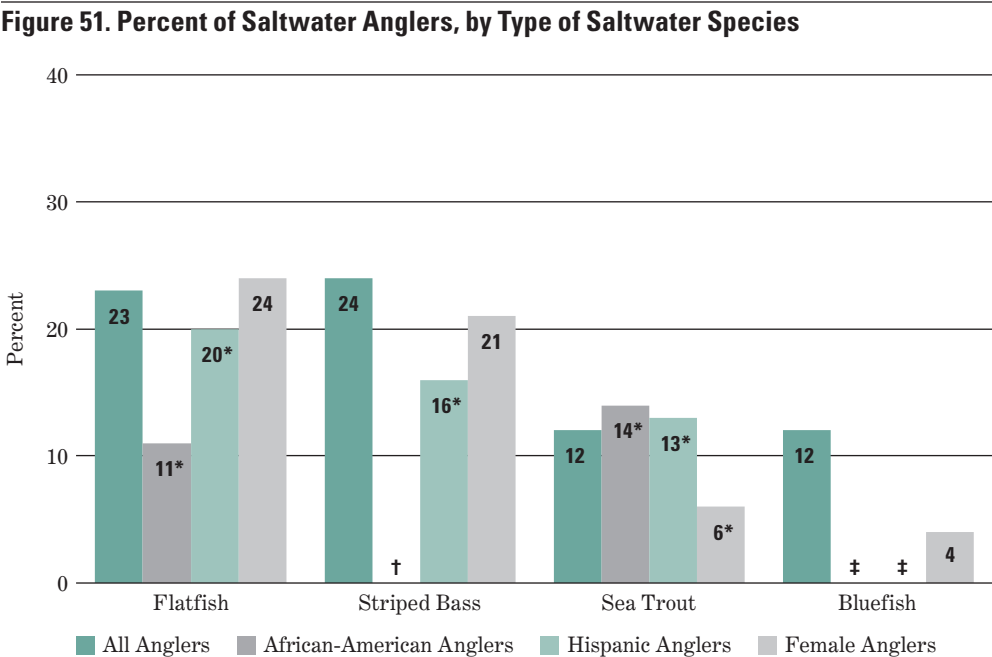
Thirty-four percent of Hispanic freshwater anglers participate in trout fishing, which exceeds the rate for all freshwater anglers and other freshwater angler subpopulations (Figure 50). Hispanic freshwater angling participation for black bass and catfish are also well represented (32 percent and 27 percent, respectively), but panfishing is not nearly as popular as it is with other groups (12 percent).

For female freshwater anglers, fishing for black bass (31 percent) and trout (24 percent) are below the participation rates for all freshwater anglers. Panfish and catfish have approximately the same participation rates for female freshwater anglers as they do for all freshwater anglers.

Figure 51 shows that the most sought after saltwater species by all saltwater anglers include striped bass (24 percent), flatfish (23 percent) (flounder, halibut, sole), sea trout (12 percent), and bluefish (12 percent). The most pursued species by Hispanics, African-Americans, and females is flatfish (20, 11, and 24 percent, respectively). Estimates for bluefish by Hispanic anglers and African-American anglers and estimates for striped bass by African-American anglers are unavailable due to small sample sizes.



*Estimate based on a sample size of 10–29.



*Estimate based on a small sample size.

† Sample size was too small to report reliably for African-American angling for striped bass.

‡ Sample size was too small to report reliably for Hispanic and African-American angling for blue fish.

Female, African-American, and Hispanic Anglers

In the following section, fishing days, fishing trips and fishing expenditures are examined by age, education, income, and residency. This in-depth analysis is conducted for each subpopulation.

Participation Levels (Days & Trips)

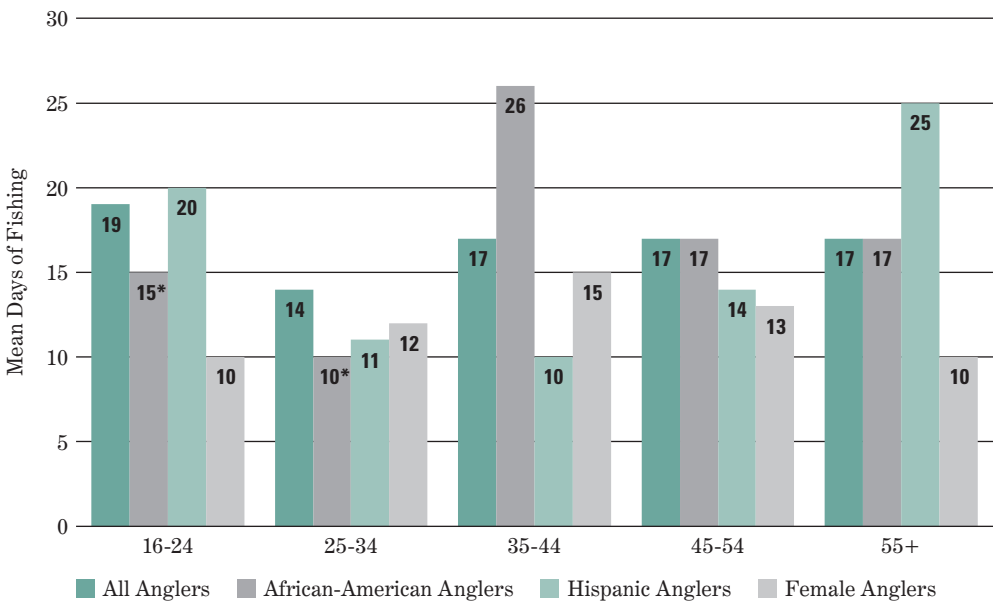
Figures 52 through 55 portray the average annual number of fishing days by age, education, income, and place of residency. Differences in days and trips of two or less are not usually statistically significant at the 90 percent confidence level and therefore should not be treated as true differences⁶.

As seen in Figure 52, age and mean fishing days are compared for all anglers and each subpopulation. For each population group, no trend emerges.

Average fishing days and education are inversely related for all anglers (Figure 53). Female anglers depict the same inverse relationship, where fishing days decrease as educational attainment increases. Fishing days for African-American anglers increase with educational attainment until achieving a college degree. Hispanic anglers do not show any clear pattern between average annual fishing days and education.

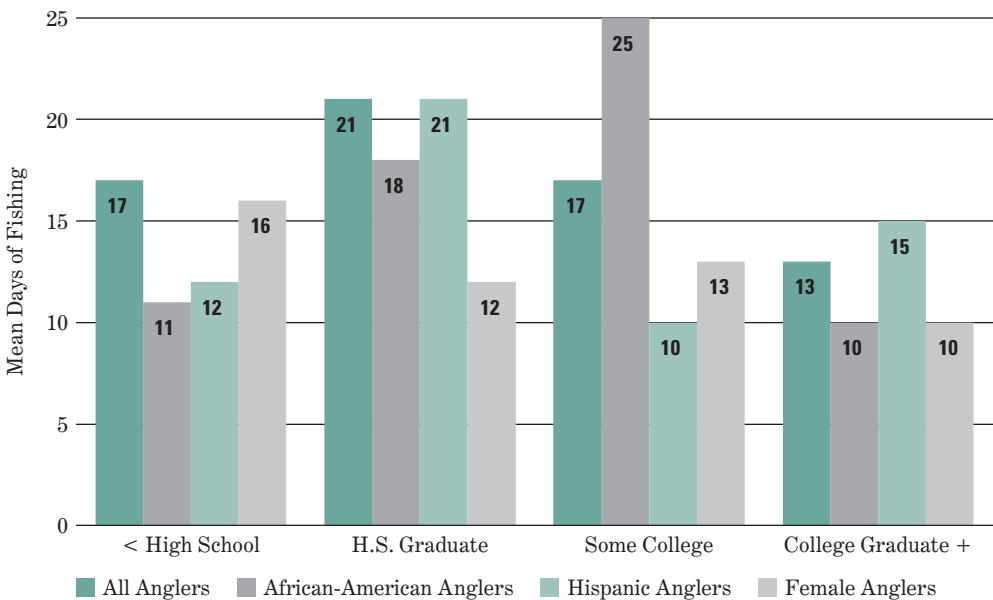
⁶ This means that for 90 percent of all possible samples, differences of 2 days or less are not statistically significant.

Figure 52. Mean Days of Fishing, by Age



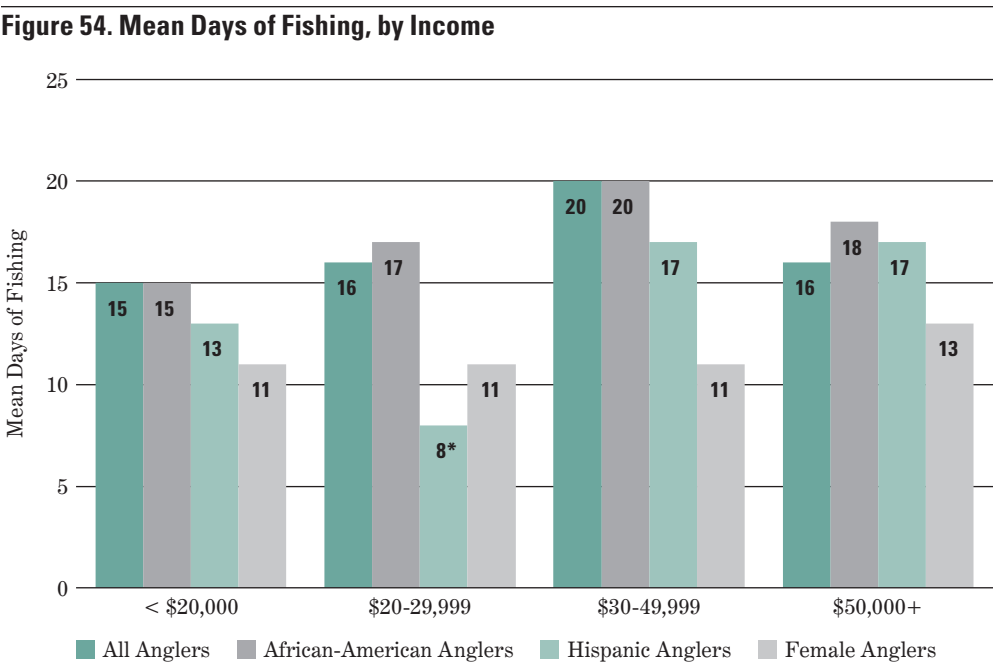
*Estimate based on a sample size of 10-29.

Figure 53. Mean Days of Fishing, by Education

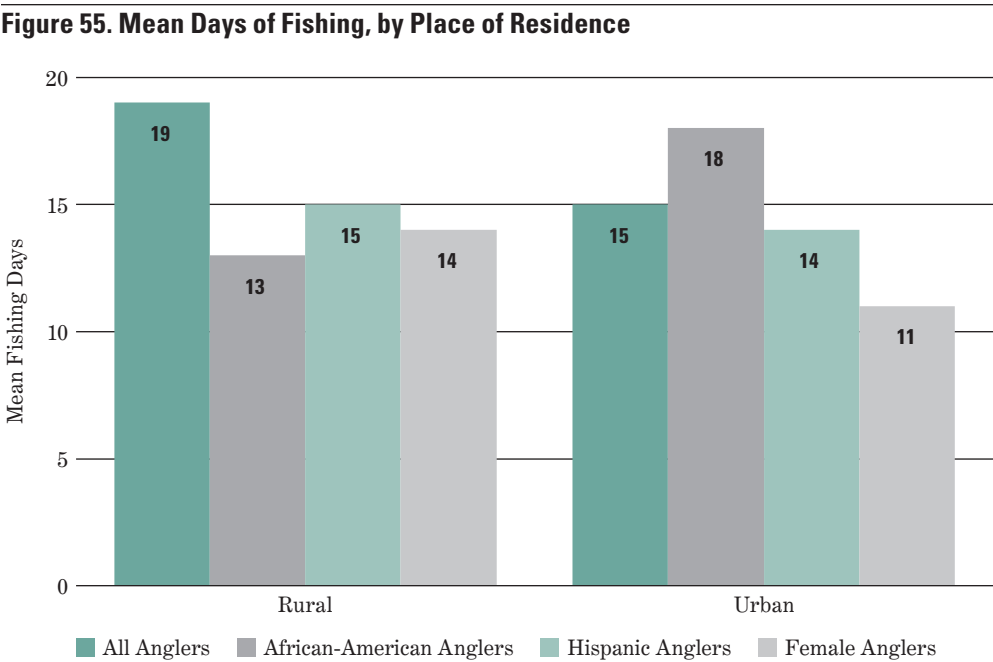


As Figure 54 shows, the relationships between mean fishing days and income for African-American anglers is positively correlated. Comparatively, fishing days are relatively constant across income for female anglers. No pattern emerges for all anglers or Hispanic anglers.

Place of residency is a factor in how often anglers fish. Figure 55 shows that mean days are lower for urban residents, except for African-American anglers.

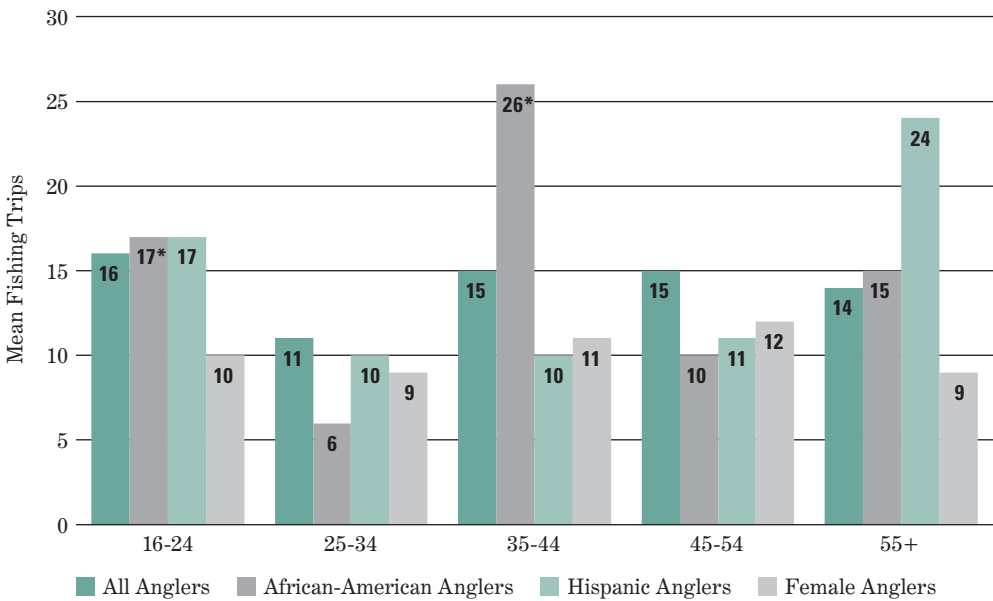


**Estimate based on a sample size of 10–29.*



Mean fishing trips are compared with age, education, income, and place of residency in Figures 56 thru 59. The pattern of mean trips is very similar to that of mean days.

Figure 56. Mean Fishing Trips, by Age



*Estimate based on a sample size of 10–29.

Figure 57. Mean Fishing Trips, by Education

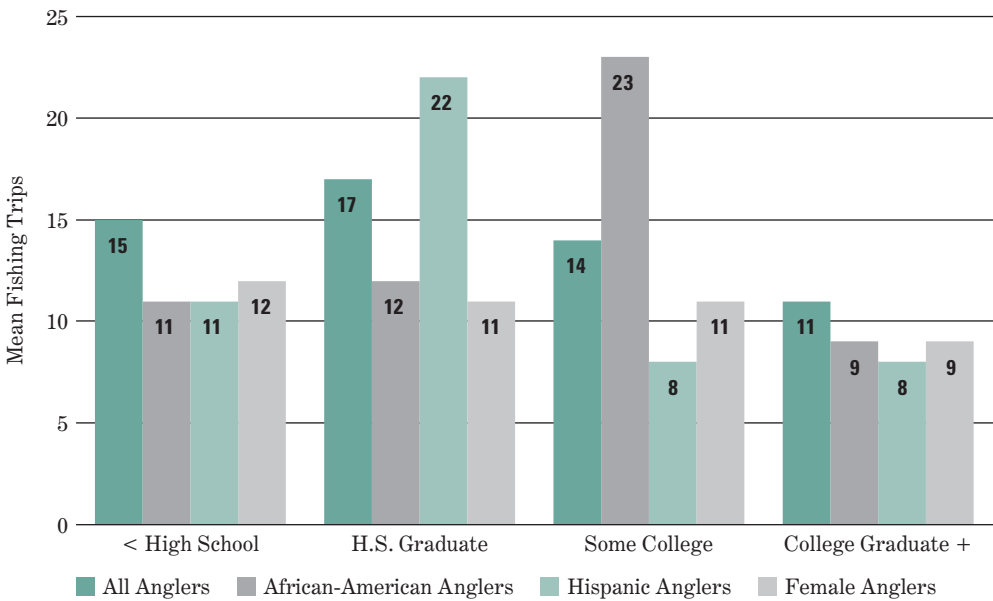
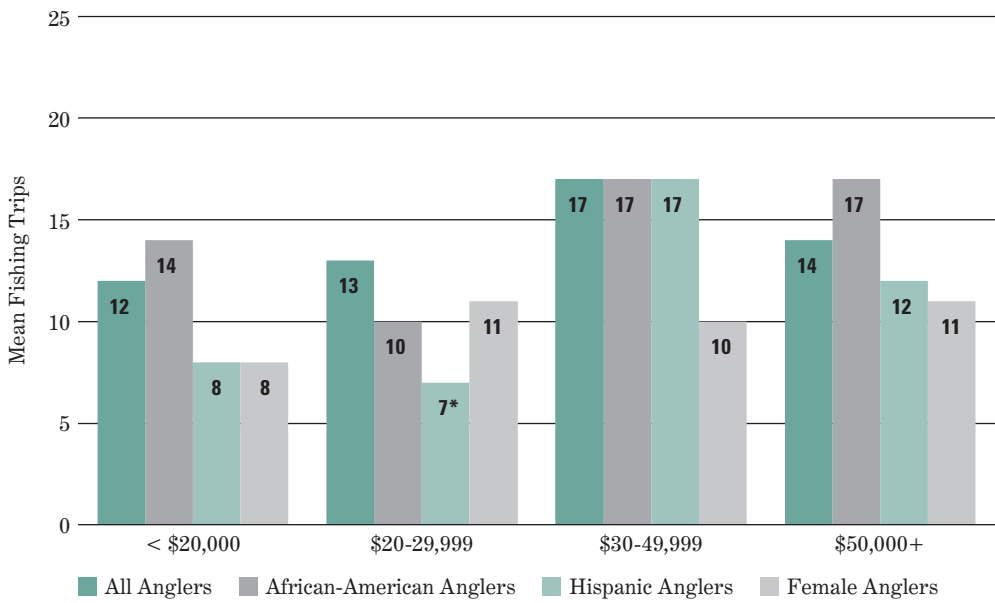
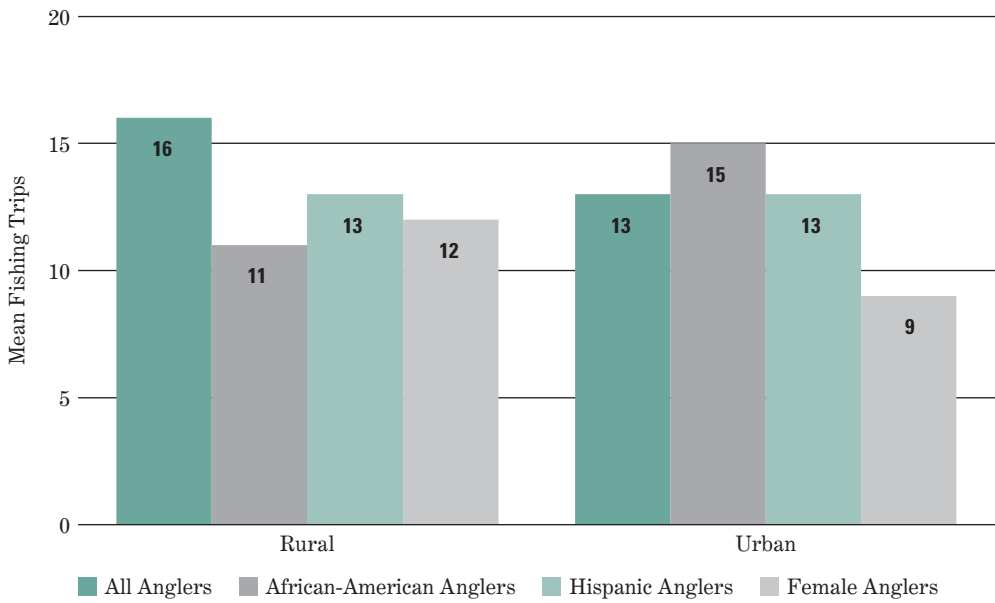


Figure 58. Mean Fishing Trips, by Income



*Estimate based on a sample size of 10–29.

Figure 59. Mean Fishing Trips, by Place of Residence



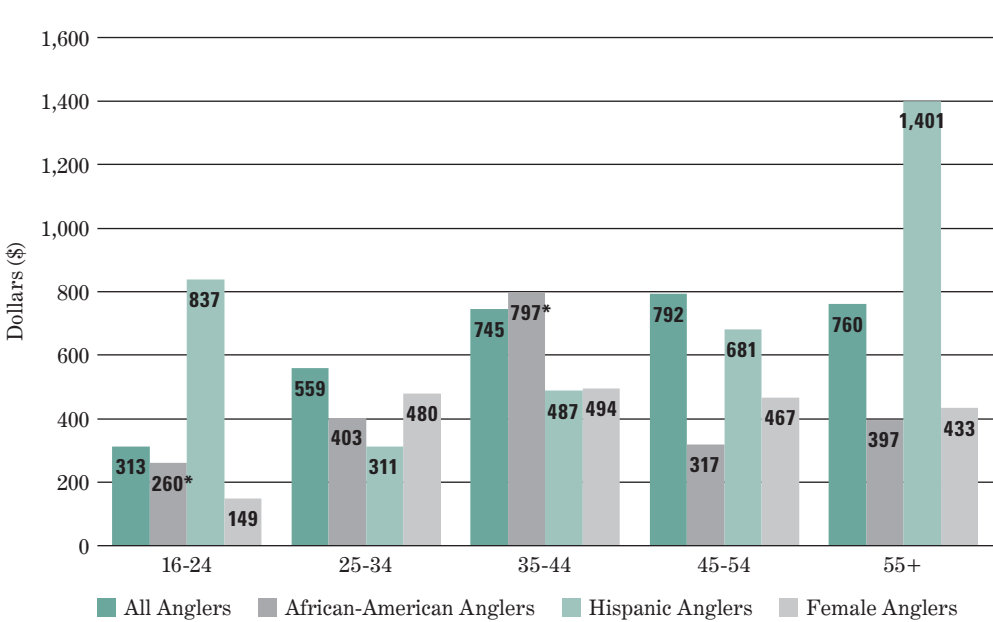
Fishing Expenditures

As shown in Figures 47 and 48, females spent on average \$438 per year for trip-related fishing expenditures and \$135 per year on fishing equipment. This was substantially below the average expenditures for all anglers. Furthermore, with the exception of Hispanic anglers' equipment expenditures, all subgroups had lower mean expenditures than all anglers. In order to better understand which segments of the subpopulations are spending more and which are spending less and how this compares with anglers in general, expenditures are analyzed by particular demographic characteristics such as age, education, income, and residency. This analysis finds some differences between the spending patterns of females, African-Americans, Hispanics, and all anglers.

Figure 60 depicts the relationship between mean trip expenditures and age. No apparent pattern between trip expenditures and age emerges for African-American anglers or Hispanic anglers. Across all age groups, each subpopulation tended to spend less than all anglers, except for Hispanic anglers age 16 to 24 or Hispanic anglers over 55. African-Americans also spent slightly more than all anglers for the 35 to 44 age group.

Mean trip expenditures increase as education increases for both all anglers and female anglers (Figure 61). Neither African-American anglers nor Hispanic anglers follow the same spending pattern. Mean trip expenditures for African-American anglers is \$163 for those without a high school degree, increases to \$589 for those anglers with a high school degree, and decreases to \$360 for those anglers with at least a college degree. No pattern emerges for Hispanic anglers. Notably, Hispanic anglers with a high school degree far outspend any other population group (\$965).

Figure 60. Mean Trip Expenditures, by Age



*Estimate based on a sample size of 10–29.

Figure 61. Mean Trip Expenditures, by Education

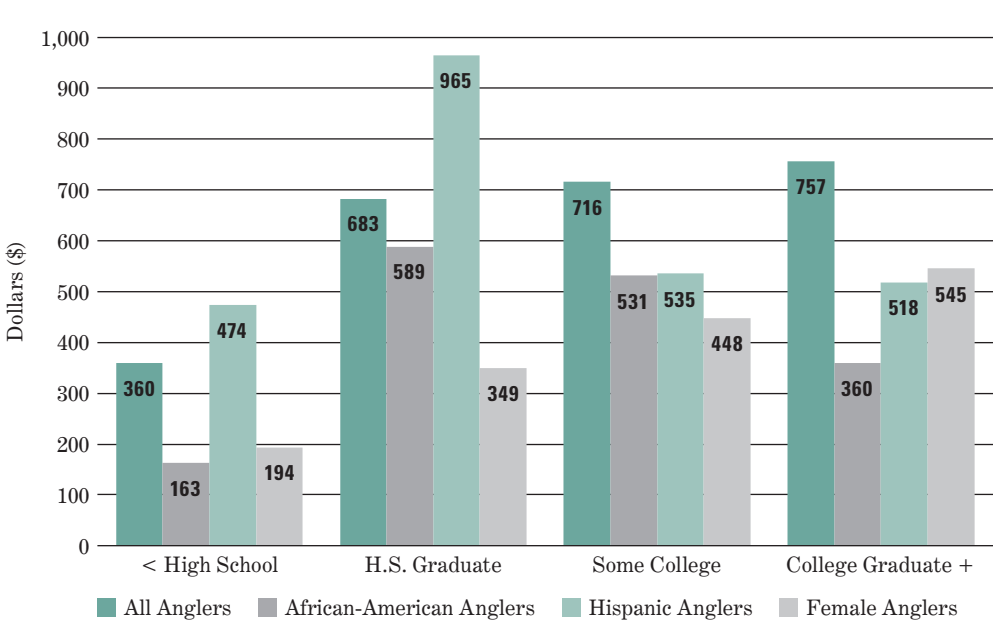
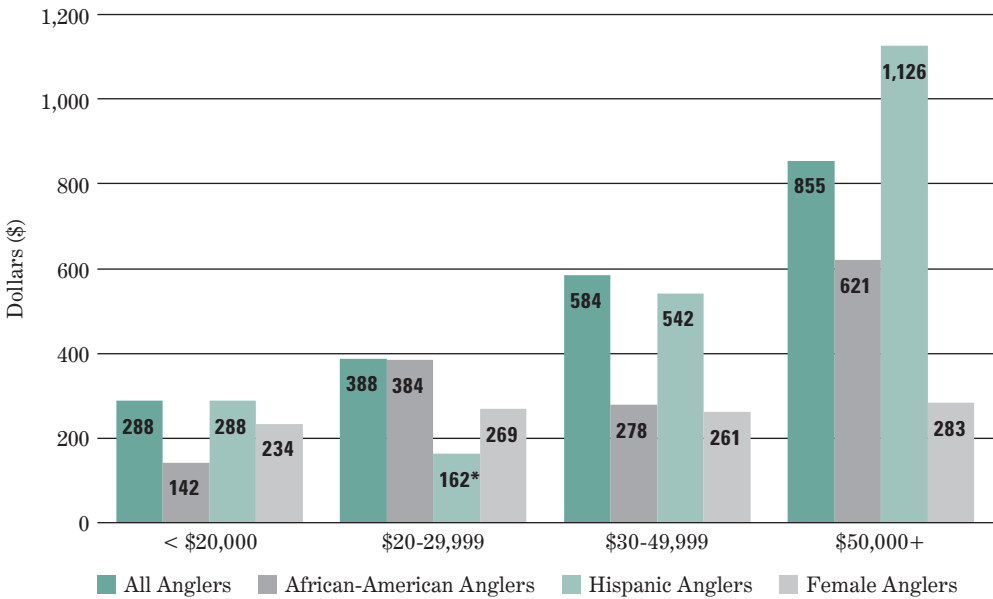


Figure 62 demonstrates the correlation between mean fishing trip expenditures and income. All anglers' trip expenditures are positively correlated with income, increasing from \$288 for those anglers with less than \$20,000 income to \$855 for those anglers with \$50,000 or greater income. With the exception of the \$20,000 to \$29,999 category, trip expenditures are positively correlated with income for Hispanic anglers. Similarly, with the exception of the \$30,000 to \$49,999 category, trip expenditures are also positively correlated with income for African-American anglers. All subpopulations have the greatest spending for those anglers with \$50,000 or greater income.

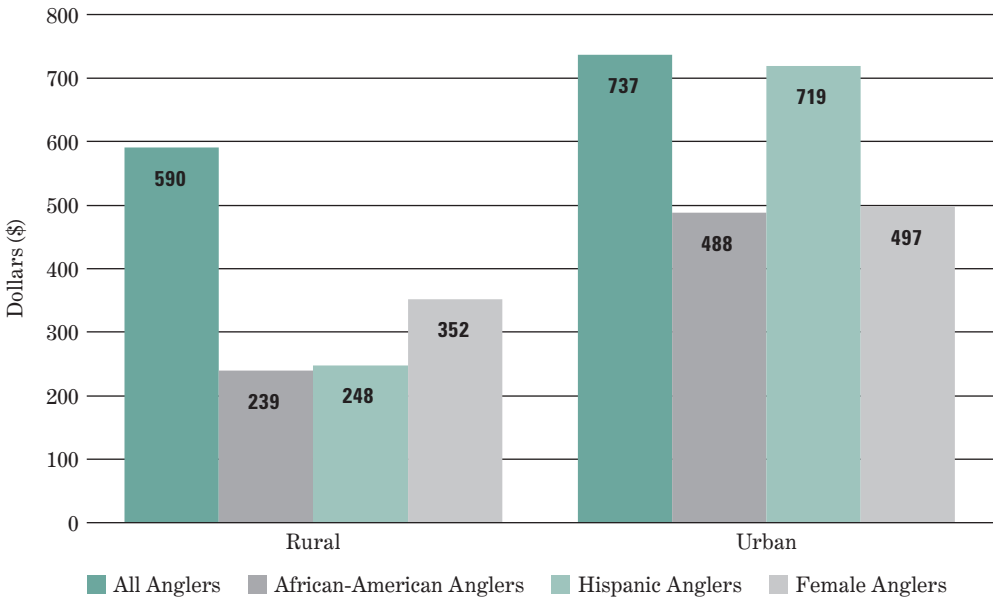
Similar to all anglers, all subpopulations from urban areas spend more, on average, for fishing trips than rural residents spend on fishing trips (Figure 63).

Figure 62. Mean Trip Expenditures, by Income



**Estimate based on a sample size of 10–29.*

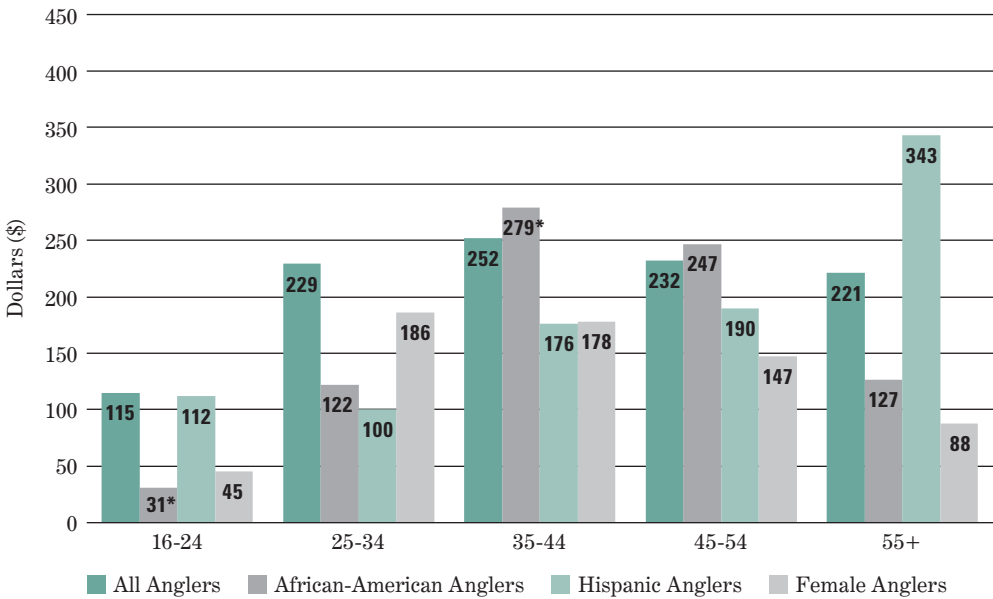
Figure 63. Mean Trip Expenditures, Place of Residence



Figures 64 thru 67 show mean equipment expenditures and their relationship to age, education, income, and residence, all else constant. Figure 64 shows the relationship between mean equipment expenditures and age. For both all anglers and African-American anglers, the highest equipment expenditures occur for those anglers aged 35 to 44 and the lowest equipment expenditures occur for those anglers age 16 to 24 or over age 55. Similarly, the highest equipment expenditures for female anglers occurs for anglers age 25 to 34. For Hispanic anglers, mean equipment expenditures are positively correlated with age

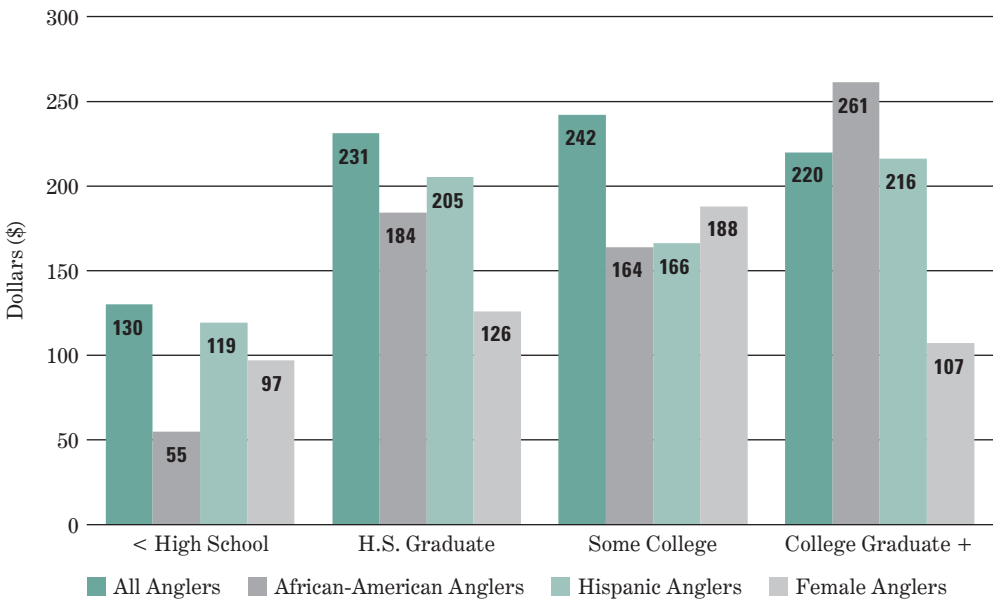
For education in Figure 65, mean equipment expenditures increase with increasing educational achievement for all anglers, and African-American anglers follow this same pattern, with a slight spending decrease for those with some college. For female anglers, mean equipment expenditures increase from \$97 for those with no high school degree to \$188 for those with some college, but decreases to \$107 for female anglers with at least a college degree. No pattern emerges for Hispanic anglers.

Figure 64. Mean Equipment Expenditures, by Age



*Estimate based on a sample size of 10–29.

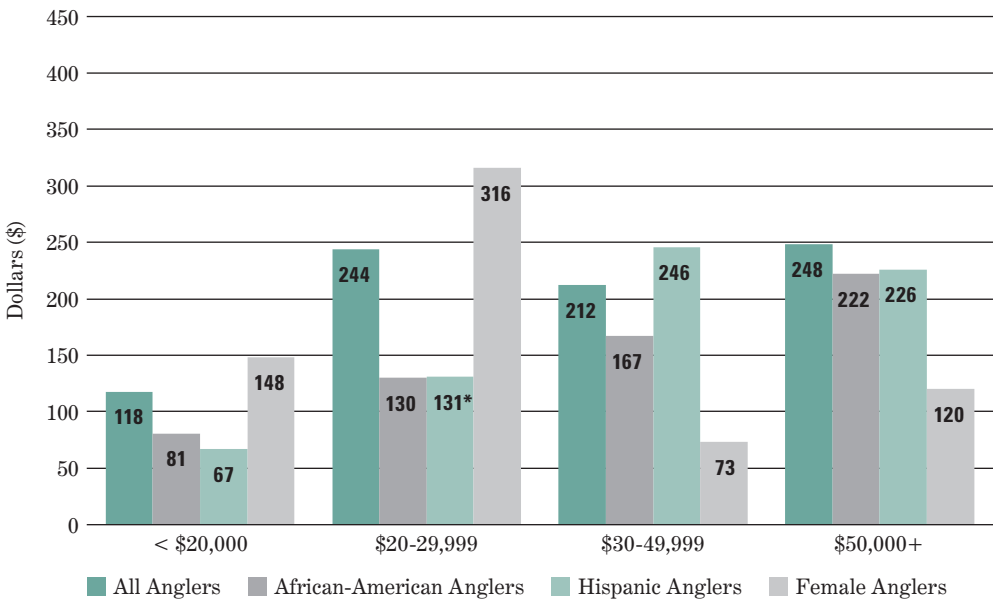
Figure 65. Mean Equipment Expenditures, by Education



Income and mean equipment expenditures are positively correlated for all anglers, African-American anglers, and Hispanic anglers (Figure 66). However, female anglers' equipment expenditures do not follow this general pattern.

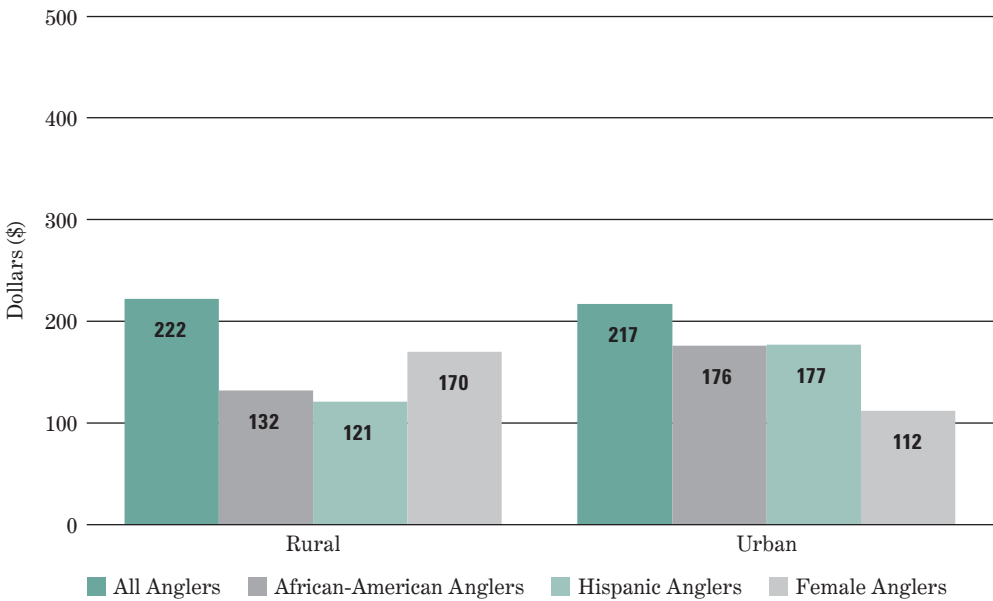
Unlike the trip expenditures pattern, equipment expenditures are not higher for all urban residents compared to rural residents (Figure 67). Urban residents that are African-American anglers or Hispanic anglers spend more than rural residents. Only female anglers that are urban residents spend less than rural residents. For all anglers, they have about the same mean equipment expenditures regardless of place of residence.

Figure 66. Mean Equipment Expenditures, by Income



*Estimate based on a sample size of 10–29.

Figure 67. Mean Equipment Expenditures, by Place of Residence



Fishing Trends 1991, 1996, 2001, & 2011

Table 4 highlights the number of fishing participants, days, and expenditures from the 1991, 1996, 2001, and 2011 Surveys and the percentage change between the years. All expenditures are depicted in 2011 dollars. Two changes are made to 2001 and 2011 expenditures in this table to be consistent with 1991 and 1996 estimates. First, fishing trip expenditures for 2001 and 2011 are slightly different from those reported in Table 3 because they do not include heating and cooking fuel. Second, 2001 and 2011 equipment expenditures are also somewhat different from Table 3 because auxiliary expenditures are not included to remain consistent with previous reports.

The number of all anglers and female anglers decreased (7 and 11 percent, respectively) between 1991

and 2011. Conversely, the number of African-American anglers and Hispanic anglers increased during this time period by 25 and 38 percent, respectively. Growth for African-American anglers was concentrated from 2001 to 2011 when participation increased from 1.56 million to 2.26 million. For female anglers and Hispanic anglers, the change from 2001 to 2011 was not statistically significant.

Overall, the total number of fishing days increased from 1991 to 2011 by 8 percent, but peaked in 1996 at about 626 million days and has since declined to about 554 million days in 2011. The fishing frequency of all anglers and female anglers participating from 2001 to 2011 was not statistically significant. However, African-American angling days increased by 50 percent and Hispanic fishing days increased by 28 percent over the last 10 years.

Between 1991 and 2011, fishing trip expenditures for all anglers, African-American anglers, and Hispanic anglers increased by 10 percent, 26 percent, and 117 percent respectively. There is no significant change for female anglers. During this same time period, total fishing equipment expenditures for all anglers and Hispanic anglers had no significant change. However, fishing equipment expenditures increased by 39 percent for African-American anglers and decreased by 18 percent for female anglers. Over the last 10 years from 2001 to 2011, there was also no significant change for all anglers for equipment expenditures. Equipment expenditures for African-Americans increased by 55 percent, females increased by 17 percent, and Hispanics decreased by 24 percent.

Table 4. Angling Comparison: Participants, Days, & Expenditures in 1991, 1996, 2001, & 2011

(Numbers in thousands, 2011\$)

	<i>Annual Estimates</i>				<i>Percentage Change*</i>			
	<i>1991</i>	<i>1996</i>	<i>2001</i>	<i>2011</i>	<i>1991 to 2001</i>	<i>1991 to 2011</i>	<i>1996 to 2011</i>	<i>2001 to 2011</i>
Anglers								
Total Anglers	35,787	35,246	34,071	33,112	-5	-7	-6	-3
African-American	1,815	1,802	1,563	2,264	-14	25	26	45
Hispanic	1,218	1,185	1,564	1,675	28	38	41	-
Females	9,935	9,509	8,912	8,885	-10	-11	-7	-
Days								
Total Days	511,328	625,893	557,394	553,841	9	8	-12	-
African-American	23,273	40,131	24,702	37,019	-	59	-	50
Hispanic	14,375	16,685	19,060	24,462	33	70	47	28
Females	97,699	112,841	107,692	105,841	10	-	-	-
Fishing Expenditures								
Total Trip Expenditures	\$19,615,631	\$21,973,130	\$18,516,000	\$21,625,127	-	10	-	17
African-American	\$722,853	\$837,584	\$509,324	\$914,090	-30	26	-	79
Hispanic	\$489,499	\$733,867	\$676,429	\$1,063,640	38	117	45	57
Females	\$3,371,465	\$3,335,238	\$2,948,156	\$3,654,843	-13	-	-	24
Total Equipment Expenditures	\$6,604,448	\$7,642,854	\$5,864,941	\$6,141,895	-11	-	-20	-
African-American	\$231,633	\$331,344	\$207,471	\$320,929	-	39	-	55
Hispanic	\$212,805	\$262,292	\$316,367	\$240,405	49	-	-	-24
Females	\$1,201,939	\$962,571	\$841,050	\$987,624	-30	-18	-	17

*A hyphen denotes that the percentage change is not different from zero at the 90 percent confidence level. Thus, for 90 percent of all possible samples, the estimate between one survey year is not different from another survey year.

Summary

This report has presented detailed information on the participation and expenditure patterns of African-American, Hispanic, and female hunters and anglers. This information includes participation rates, participation levels (days and trips), expenditures, usage of public and private land, types of hunting and fishing, and species pursued. Comparisons of this information among the different populations for hunters and anglers reveal that these populations are unique in many respects.

The data can be used in several ways to improve the hunting and fishing experiences of these low participation groups. One way may be to shape hunting and fishing conservation and safety programs for specific groups. Data on participation rates, participation levels, and expenditures may help pinpoint certain groups of people more likely to participate. For instance, the data show that females living in rural areas are more likely to hunt than females living in urban areas. Furthermore, these females living in rural areas take more hunting trips and hunt more days, on average, than females living in urban areas. Hunting conservation and safety programs designed toward these demographics could be both well received and cost effective.

Hunting and fishing experiences may also be improved through efficient allocation of resources. Data provided on the use of private and public land, types of hunting and fishing, and species sought combined with other data on participation may help resource managers make informed decisions. For example, the report shows that many hunters hunt predominately on private land. Resource managers could examine the reasons why private land is preferred over public land for hunting and increase efforts to make public land more favorable. Information about types of hunting and fishing and species sought can be used in a similar manner.



USFWS

Another use of the data is directing information toward the appropriate user groups. For instance, the report shows that a large proportion of Hispanic anglers live in the West and fish for trout. Changes in trout fishing regulations or trout fish advisories in the West could therefore have a large impact on this group. Wildlife professionals could target information to this group in Spanish and English and choose the best medium (e.g., newspaper, magazines, television, posters) to disseminate the information.

Expenditure information can provide the hunting and fishing industry with a better understanding of their

customers. Demographic profiles of trip and equipment expenditures can be used to better serve customers and for marketing purposes. A key finding is that Hispanic anglers spend more on average on trips and equipment than other subpopulations. However, the number of African-American anglers and their overall spending has increased at a faster rate than any other subpopulation over the last decade.

Wildlife professionals can use this information in any number of ways to arrive at a better understanding of groups who do not hunt or fish as much as the rest of the population.

Appendix A: Sample Sizes

Sample sizes for hunters and anglers are presented in Tables A-1, A-2, A-3, and A-4. For the statistical analysis, small sample sizes are considered to be between 10 and 29 observations. Samples sizes of less than ten were considered too small to report data reliably. These guidelines are consistent with the “2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.”



USFWS

Table A-1. Sample Sizes for Hunters

Category	All Hunters			African American Hunters			Hispanic Hunters			Female Hunters		
	Days	Trips	Trip Expend.	Days	Trips	Trip Expend.	Days	Trips	Trip Expend.	Days	Trips	Trip Expend.
Age												
16-24	263	265	265	2	3	3	11	11	11	43	44	44
25-34	377	378	378	5	5	5	4	4	4	53	53	53
35-44	494	497	497	6	6	6	13	13	13	48	49	49
45-54	625	626	626	8	8	8	16	16	16	58	58	58
55+	920	925	925	19	19	19	17	17	17	50	50	50
Education												
< High School	257	257	257	9	9	9	11	11	11	20	20	20
H.S. Graduate	1,075	1,083	1,083	17	18	18	25	25	25	82	82	82
Some College	636	639	639	9	9	9	15	15	15	72	74	74
College Graduate +	711	712	712	5	5	5	10	10	10	78	78	78
Income												
< \$20,000	155	155	155	8	8	8	2	2	2	19	19	19
\$20-29,999	184	185	185	7	7	7	3	3	3	25	25	25
\$30-49,999	482	483	483	8	8	8	16	16	16	48	49	49
\$50,000+	1,496	1,499	1,499	12	12	12	34	34	34	130	130	130
Region												
Midwest	768	769	769	1	1	1	5	5	5	66	66	66
Northeast	478	481	481	1	1	1	7	7	7	42	43	43
South	819	827	827	35	36	36	7	7	7	80	81	81
West	614	614	614	3	3	3	42	42	42	64	64	64

Table A-2. Sample Sizes for Hunters, continued

Category	All Hunters	African-American Hunters	Hispanic Hunters	Female Hunters
Type of Hunting				
Big Game	2245	30	48	211
Small Game	938	20	19	66
Migratory Birds	485	2	11	29
Other Animals	376	3	8	24
Type of Game				
Deer	2044	30	36	192
Elk	265	0	19	20
Squirrel	337	12	5	16
Rabbit	327	10	12	13
Type of Land				
Private Land	2,133	35	26	194
Public Land	1,120	5	39	77
Residence				
Urban	977	15	43	71
Rural	1,672	26	17	181

Table A-3. Sample Sizes for Anglers

Category	All Anglers			African-American Anglers			Hispanic Anglers			Female Anglers		
	Days	Trips	Trip Expend.	Days	Trips	Trip Expend.	Days	Trips	Trip Expend.	Days	Trips	Trip Expend.
Age												
16-24	523	518	519	527	20	20	20	34	33	33	135	132
												137
25-34	840	825	829	843	31	29	29	68	66	66	277	273
												277
35-44	1,024	1,009	1,012	1,029	29	29	30	56	56	56	286	278
												288
45-54	1,189	1,174	1,176	1,192	49	49	49	44	44	45	320	316
												317
55+	1,650	1,621	1,625	1,657	69	69	69	46	46	46	354	344
												345
Education												
< High School	475	462	462	479	37	37	37	49	48	48	103	99
												100
H.S. Graduate	1,755	1,722	1,727	1,763	72	71	71	89	89	89	403	391
												392
Some College	1,336	1,321	1,326	1,342	57	56	57	65	64	65	412	406
												408
College Graduate +	1,660	1,642	1,646	1,664	32	32	32	45	44	44	454	447
												447
Income												
< \$20,000	405	395	398	407	39	39	40	32	32	32	134	128
												129
\$20-29,999	427	416	416	428	32	32	32	29	29	29	139	133
												133
\$30-49,999	1,027	1,004	1,006	1,029	55	53	53	62	62	62	276	269
												269
\$50,000+	3,367	3,332	3,341	3,384	72	72	72	125	122	123	823	813
												816
Region												
Midwest	1,225	1,193	1,193	1,229	19	17	17	24	23	23	339	325
												326
Northeast	1,072	1,055	1,060	1,081	17	17	17	36	36	36	253	251
												252
South	1,559	1,537	1,544	1,565	138	138	139	46	46	47	429	421
												423
West	1,370	1,362	1,364	1,373	24	24	24	142	140	140	351	346
												346
												352

Table A-4. Sample Sizes for Anglers, continued

Category	All Anglers	African-American Anglers	Hispanic Anglers	Female Anglers
Type of Fishing				
Freshwater (excludes Great Lakes)	4,961	168	230	1,256
Saltwater	1,743	82	85	416
Great Lakes	166	4	4	33
Type of Freshwater Species				
Black Bass	1,751	55	56	307
Panfish	1,187	53	29	294
Trout	1,740	31	117	385
Catfish	1,060	62	56	274
Type of Saltwater Species				
Flatfish	387	17	18	83
Striped Bass	479	21	18	82
Sea Trout	154	10	7	18
Bluefish	237	4	10	40

U.S. Department of the Interior
U.S. Fish & Wildlife Service



May 2016